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PREFACE

This report covers detailed results of the National Health Account (NHA) study for the financial years 1998/1999, 1999/2000 and 2000/2001. The study was conducted with the aim of shedding some light into issues of health financing in Namibia and to provide a sound evidence-base for health policies which aim at advancing the achievement of the cherished goals and objectives of the health system.

The study has benefited from the valuable inputs provided by the MOHSS officials. The conduct of this study was made possible through the technical and financial support of the World Health Organisation

My sincere appreciation goes to all organizations/institutions/firms, parastatals and other government ministries and agencies that participated in the study for their cooperation and support. Furthermore, my appreciation goes to the NHA team: Dr E. Zere (WHO, Namibia), Mr. W. Kapenambili, Mr. T. Mbeeli, Mr. B. Tjivambi, Mr. C. Mwandingi and Mr. T Mwase (WHO/AFRO) for conducting this first- ever study in Namibia

It is my sincere hope that the National Health Accounts results will be put to good use by both planners and policy makers for policy formulation on issues such as resource allocation, health financing and efficiency within the health sector.

DR. K.SHANGULA
PERMANENT SECRETARY

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ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
DALE	Disability adjusted life expectancy
DEA	Data Envelopment Analysis
ESA	Eastern and Southern Africa
FY	Financial Year
GDP	Gross Domestic Product
GNP	Gross National Product
HDI	Human Development Index
HIV	Human Immunodeficiency Virus
MAWRD	Ministry of Agriculture, Water and Rural Development
MBESC	Ministry of Basic Education, Sport and Culture
MFMR	Ministry of Fisheries and Marine Resources
MoD	Ministry of Defence
MoF	Ministry of Finance
MoHSS	Ministry of Health and Social Services
MoL	Ministry of Labour
N$	Namibian dollar
NDP 2	National Development Plan 2
NGO	Non Governmental Organisation
NHA	National Health Accounts
NPC	National Planning Commission
OECD	Organisation of Economic Cooperation and Development
PHC	Primary Health Care
PSIP	Public Sector Investment Programme
RMT	Regional Management Team
SADC	Southern African Development Community
THE	Total health expenditure
TT	Tetanus toxoid
US$	United States Dollar
WHO	World Health Organisation

Executive Summary

This study is conducted with the aim of shedding some light into issues of health financing in Namibia and contribute to filling the existing information gap. It is expected to provide a sound evidence-base for health policies which aim at advancing the achievement of the cherished goals and objectives of the health system.

It is found that in comparison to many countries in Sub-Saharan Africa, Namibia spends a significant proportion of its GDP on health, the greater part of which comes from public sources. Health care is one of the priorities of the government as evidenced by a relatively higher allocation of its budget to the health sector. The main findings of this study are as follows:

- The country's total health expenditure for FY 1998/1999 was estimated at N$ 1,273,115,510 for FY 1999/2000 at N$ 1,440,407,536 and FY 2000/2001 at N$ 1,658,694,285. For the period 1998 – 2001 the country's total health expenditure per capita was in the range of N$ 753 - N$ 908 (between 304 and 362 international dollars).

- Namibia's total expenditure on health as percentage of GDP is a little higher than 6%. This deviates slightly from what is reported by international organization such as WHO, which put the total health expenditure as a percentage of GDP in the order of 7.5%. Namibia's total health expenditure per capita is favourable compared to those of many countries in the region.

- The government has been allocating more than 11% of its budget for health activities. Although the total health expenditure per capita has been increasing in absolute terms (from N$ 781 to N$ 930), its percentage share in total government budget has been on the decline.

- Over the reporting period Government has been the largest source of funding (69.7%, 70.9% and 65.7%).

- The share of non public funds in the total health expenditure is relatively small and is about 30%. However, over the period under review the role of the private sector as well as donor funds have increased remarkably from 27.7% to 30.5% and 2.5% to 3.8% respectively.

- The contribution of development partners to total health expenditure is minimal, 2.5% (FY 1998/99), 2.5% (FY 1999/2000) and 3.8% (FY 2000/2001). This implies that unlike the health systems of many countries in Sub-Saharan Africa, dependency of the Namibian health system on donor funds is very little.

- Hospitals are the main recipients of health resources from the financing agents. They receive from 40% - 45% of total general health expenditure. During the period considered the amount earmarked to hospitals declined by about 5 percentage points.

- Transfer of funds to public health programmes had shown a relatively substantial increase from 1.9% to about 4 %. This may reflect a re-allocation of resources in

line with the Ministry's health policy framework which is based on the principles of PHC.

- There is a high expenditure on personnel costs (about 60%) compared to other equally important health care inputs necessary for optimal service delivery.

- The distribution of MoHSS resources among the 13 regions is not based on the differential health needs. The analysis points out that regions which are well-off in terms of per capita income and have relatively high HDI receive the highest per capita allocation.

- It is also demonstrated that health outcomes are not commensurate with the health care resources that the country spends. Moreover, it is revealed that the regions that receive relatively lower amounts of resources perform better than those receiving higher amounts.

Despite the limitations of obtaining the necessary information, the study has come up with a number of important findings that will assist in guiding health resource allocation decisions in the country. It is recommended that to provide the policy making process with very reliable evidence, the health information system in both the public and private sectors needs to be strengthened.

1. INTRODUCTION

Health systems play a vital role in the healthy development of individuals, families and communities. To achieve this and other goals, they perform the key functions of service provision, resource generation, financing and stewardship (WHO 2000).

Faced with a chronic and ever deepening scarcity of health care resources, most countries in Sub-Saharan Africa have been undertaking reforms of their health systems since the 1970s. Central to all reforms has been the financing of health systems, which includes both resource mobilization and resource allocation mechanisms (Gilson *et al* 1999). Reforms are designed to improve objectives such as equity, efficiency (both technical and allocative), quality and sustainability of the health system.

Most developing country health systems are strained as a result of not only an absolute shortage of resources, but also increases in the need for health care resulting from the demographic and epidemiological transitions, the emergence of major public health problems such as HIV/AIDS, and the resurgence of diseases that once were manageable using low-cost drugs (e.g. the emergence of chloroquine-resistant strains of malaria). This mismatch between dwindling resources and ever-growing needs for health care in addition to mobilizing calls for a more efficient use of existing resources. In such a scenario, policy-makers need reliable information on the sources and uses of funds for health in the country. National health accounts (NHA) help in providing this information.

NHA help address the following questions about a country's health system (WHO, NHA Producers Guideline 2003):

- How much is being spent on health?
- Where is the money being spent?
- On what is it being spent?
- For whom is it being spent?
- How has it changed over time?
- How does it compare with other countries?

Reports indicate that Namibia spends a significant amount of its resources on health care. Furthermore, health care represents a significant proportion of the government budget. However, the data given in most instances are not based on a comprehensive tracking of the expenditure on health in the country. Some of the figures given by the international organizations are in large part extrapolations from the meager data available. Hence to provide a sound evidence-base for health policies which aim at advancing the achievement of the cherished goals and objectives of the health system, the undertaking of NHA and consequently its institutionalization are invaluable.

No NHA study has been undertaken in Namibia to date. Hence this pioneering study will shed some light into issues of health financing in the country and fill the existing information gap. In Namibia, the NHA exercise is undertaken with the following objectives:

- Quantifying the total health expenditure in the country;
- Tracing and documenting the flow of funds in the health system;

- Describing the total expenditure on health by providers, functions, line item, level of care and geographic locations;
- Evaluating the efficiency and equity of resource allocation, albeit to a limited extent due to deficiency in the needed secondary data; and
- Evaluating the sustainability of the health system.

The report is organized as follows:
Section 2 attempts to give a basic explanation of what NHA are and the type of policy issues that they can potentially address and their limitations;

Section 3 gives a brief description of the country's health system including socio-demographic conditions, macroeconomic environment, epidemiological profile, health policy and organization and financing of services and major challenges that the health system currently faces;

Section 4 spells out the methodology used in the study including operational definitions of key terms, issues of sampling, data collection and analysis and limitations of the study;

Section 5 presents the major finding of the study and discusses their implications to equity, efficiency and sustainability of the system; and

The final section wraps up the report with a summary of the policy implications and concluding remarks.

2. NATIONAL HEALTH ACCOUNTS

National Health Accounts (NHA) is a tool that has been used internationally to diagnose the financial functioning of health system and thereafter design sound health financing policies, which would lead to improvement in the performance of health systems and ultimately improvement in health status. It provides a framework for measuring total expenditure on health i.e. both public and private including households. It tracks the flow of funds through the health system, from their sources through financing agents to uses (providers, functions and line items).

NHA is an internationally established method that, in a country and over a period of time:

- Provides an overview of the financial functioning of the health care system
- Identifies its main agents: sources intermediaries and providers
- Pinpoints financial flows from where, how and where the money goes
- Breaks down the expenditure – total and main components - on health
- Detects behaviour of providers and consumers; and
- Maps resource allocation

2.1 What questions can NHA answer

- *Who pays and how much do they pay for health?* Knowing on whom the burden of financing falls and how large it is relative to their income illuminates issues of fairness of the health system financing (equity) and financial protection.
- *Who are the important actors in health financing and health care delivery and how significant are they in total expenditure?* How expenditures are distributed among the different financing entities and health care providers is one way of gauging the overall role of each in the health system. Health accounts is particularly useful in contrasting the size and role of Government, health insurance and private expenditure on health.
- *How are health funds distributed across the different services, interventions and activities that the health system produces?* The commitment of health resources to health functions is one valuable measure of the actual priorities of a health system. What share of spending is claimed by public health interventions relative to inpatient services. Such a measure is an excellent indicator of whether policies to shift resource priorities are being achieved. NHA can also contribute to the analysis of cost-effectiveness and health service efficiency, by linking expenditures with health outputs and outcomes.
- *Who benefits from health expenditures?* Knowing who benefits from health expenditure is one important measure of assessing of fairness in distribution. There are a number of important dimensions that are of great relevance for policy – e.g. socio-economic, gender, age and geographical distribution.

2.2 **Why National Health Accounts in Namibia?**

The Namibian health system consumed around 7.5% of GDP[1] (or about 312 international US$ per capita per annum, WHO Report 2000) in 1997 and 1998. Despite such high expenditure levels, the Namibian health system performed poorly. The health outcomes in terms of disability-adjusted life expectancy were poor compared to countries at similar levels of development and with similar levels of health expenditure per capita per annum. However, it has to be noted that figures supplied by international organization are based on extrapolations from meager data and need to be viewed cautiously.

This scenario raises serious questions with regard to the allocative and operational efficiency and equity of the current use of the resources (even though it is established that the health of an individual or population is a function of many variables such as income, education, nutrition etc and health care is just one of them) in the health system. In other words the Namibian health system does not suffer from absolute inadequacy of financial resources (as evidenced by high expenditure per capita per annum), but may be suffering from relative inadequacy of resources (inefficiency and inequity in resource allocation and utilization).

Thus, for this situation to be remedied there is need for information of the complete picture of the financial functioning of the health system: data on total spending on health from all sources, how much is provided by each source and on what is it spent. This information is currently inavailable in Namibia. Without this information, there is very little that can be done to improve the performance of the health system, since the basis for prioritising among different health objectives, evaluating alternative ways of allocating resources and for developing efficient and effective ways of providing health services is lacking.

As NHA is capable of providing complete picture of the financial functioning of the health system, it has been deemed necessary that Namibia conduct and establish her NHA framework as a tool for evaluating its current health system performance and then use findings for planning, management, policy development, implementation and monitoring of the health system performance.

[1] GDP is defined as the total market value of all goods and services produced in a given year within the borders of a country.

3. COUNTRY PROFILE

3.1. Socio-demographic conditions

Namibia with a surface area of 824,116 square km is the 5th largest country in Africa. It is located in the south-western part of the continent and shares borders with South Africa in the south and southwest, Botswana in the east, Angola and Zambia in the north and Zimbabwe in the eastern end of the Caprivi strip. The country is geographically divided into three major regions, i.e., the Namib Desert, the Central Plateau and the Kalahari Desert. Administratively the country is divided into 13 Regions and 34 Districts.

According to Census 2001, the population of Namibia is estimated at 1,830,330 with a growth rate of 2.6% per annum (National Planning Commission 2001). This implies a population density of 2.2 persons per square kilometer, making the country one of the most sparsely populated areas of the world. There is a sex ratio of 95 (i.e. 95 males per 100 females) and an average household size of about 5 persons.

Vital statistics indicate that Namibia has favourable under-five mortality rates compared to those of many countries in sub-Saharan Africa. During the period 1992-2000, childhood mortality rates declined remarkably. Infant mortality dropped from 57 per 1000 in 1992 to 38 per 1000 in 2000. Similarly the under-five mortality declined from 83 to 62 per 1000 in the same period. The total fertility rate declined from 5.4 (per woman age 15-49 years) to 4.2 (a change of -29 percent).

While Namibia has achieved major gains in reducing mortality among children over the past 10 years, life expectancy in other age groups has not improved. The HIV/AIDS epidemic has caused a massive decline in the life span of the average person. The overall life expectancy which was 61 years in 1991 dropped to 49 years in 2001.

3.2. Macroeconomic Environment

Namibia, with a GNP[2] per capita of US$ 1,890, is classified as a lower middle-income country[3]. Namibia's GNP per capita exceeds by far the average GNP per capita of US$ 500 for sub-Saharan Africa, as well as that of the lower middle-income countries, which is in the order of US$ 1,200.

In the period 1998-1999, the economy registered an average annual growth rate of 0.6% in GNP per capita. A comparison of the growth rate in per capita GNP with those of the previous years indicates that the country experienced a decline in economic growth. During the period 1990-1997, GNP per capita grew at an average annual rate of 1.1%. The marginal growth rates of the economy are, however, masked when the rate of inflation is factored in. The annual rate of inflation for the same period was about 9%.

[2] GNP is defined as the total market value of all goods and services produced in a given year by a county's domestically owned factors of production.

[3] The World Bank classifies countries into three income groups according to 1999 GNP per capita: low income (US$ 755 or less); lower middle-income (US$ 756 – 2,995); upper middle-income (US$ 2,996 – 9,265), and high income (US$ 9,266 or more)

Although Namibia is regarded as a lower middle-income country, the GNP per capita of the country does not represent the realities. There is a high degree of income inequality as evidenced by a gini coefficient[4] of 0.7, which is among the highest recorded in the world (SADC *et al* 2000). The richest 10% of the population amasses 65% of the country's income. This may partly be attributed to the exclusionary social and economic policies of the apartheid system that existed for decades until the country's independence in 1990. Furthermore, despite the relatively high level of per capita GDP that the country enjoys, about 35% of Namibia's population lives below $ 1 a day, indicating high levels of income poverty.

On the basis of the Human Development Index (HDI)[5], the country, with an HDI of 0.627 is classified in the category of countries that are designated as *Medium Human Development* (UNDP 2003). The difference between the country's GDP per capita rank and rank in HDI is –53, implying that the country's performance in translating resources into welfare seems compromised.

In addition to the high degrees of income inequality, the disparities in the HDI among various socio-economic groups in the country demonstrate a duality of the Namibian society, where there are those that enjoy HDI levels of the developed countries, and those disadvantaged ones who are even worse off when compared to average HDI levels for sub-Saharan Africa.

The prominent challenges for the economy remain to be the redressing of inequalities in income and welfare as well as the reduction of the high levels of poverty. The government, through its various policies and interventions is relentlessly working towards ameliorating these problems. However, given the current state of the Namibian economy, which is not making impressive growth in real terms, rectification of these ills inherited from an unjust system would require some time to materialize.

3.3. Epidemiological profile

The greatest proportion of the disease burden is mainly accounted for by communicable diseases. Diseases such as HIV/AIDS, tuberculosis and malaria have a relatively high incidence. Namibia is one of those countries in sub-Saharan Africa that are hardest hit by the HIV epidemic. The prevalence rate in 2001 was estimated at a little above 20 percent. Likewise, tuberculosis is on the increase, due partly as a result of its association with HIV/AIDS. In 2001, the incidence rate of tuberculosis was estimated at 680 per 100,000 population. Malaria is also posing a major problem. The disease is endemic in the Northern parts of the country, affecting 22 out of a total of 34 districts in the country. The annual incidence rate of the disease is in the order of 248 per 1000 population (MoHSS 2002, Annual Malaria Control Programme).

[4] The gini coefficient measures the extent to which the distribution of income among individuals or households deviates from a perfectly equal distribution. A gini coefficient of zero means perfect equality, while a coefficient of 1 implies perfect inequality. Countries with a gini coefficient of 0.5 and above are considered to have high levels of income inequality.

[5] The Human Development Index (HDI) is a composite measure composed of the GNP per capita, longevity, level of literacy and school enrolment. It measures average achievements in basic human development. It ranges from zero to one.

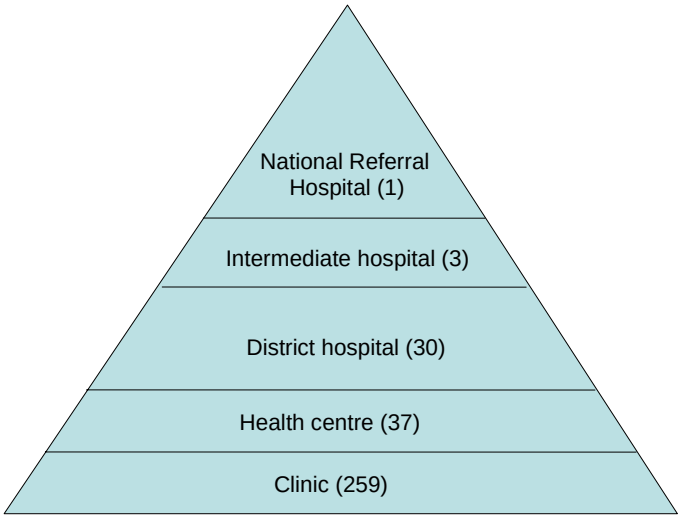
The country also seems to be in epidemiological transition. Non-communicable diseases are also on the increase along with communicable diseases. Hospital statistics indicate that conditions such as cancer and cardiovascular problems are among the top causes of death. This creates an additional burden to the country's health system, which is already overstretched by emerging and re-emerging communicable diseases.

Under-five child malnutrition is also one of the major health problems in the country that needs attention. The prevalence of stunting (low height-for-age) estimated at about 24% (DHS, MOHSS 2000). A breakdown of the average prevalence of stunting by various variables such as geographical location and mother's level of education shows striking differences between groups highlighting the prevalence of significant inequities in health. For example, the rate of stunting in children whose mothers have no education is more than twice that of children whose mothers have completed secondary school and above.

3.4. Health policy and organization of services

The country's health policy is based on the tenets of the Primary Health Care (PHC) approach that include equity, community involvement and intersectoral collaboration. The central level Ministry of Health and Social Services plays a stewardship role – it is entrusted with the formulation of policies and strategic plans, resource mobilization and allocation and external relations. To increase the responsiveness of the system, there are 13 Regional Management Teams (RMTs) that oversee service delivery in a total of 34 health districts. The clinic is the entry point in the delivery of health services. For a better understanding, the organization of service delivery is depicted in the following figure.

Figure 1
Organization of service delivery



As can be seen from Figure 1, while there are about 7 clinics for each health center, the number of hospitals and health centers is almost equal.

In addition to the public sector health facilities, there are also private for-profit hospitals and clinics that mainly cater for the urban population. There are about 12 private hospitals with a bed complement of 640, comprising about 9% of the total hospital beds in the country. Private not-for profit facilities are mainly located in the Northern parts of the country and are fully financed by the government. This, in other words, illustrates the case of public financing and private provision.

3.5. Access to and Utilization of Services

It is estimated that about 80% of the population lives within 10 km distance from public health facilities. However, a cut-off distance of 10 km for indicating physical proximity to any form of health facility is too large. It would be worthwhile to have a smaller cut-off point (such as a radius of 5 km) for an increased geographical access. Thus, expectedly the proportion of the population that is within a distance of about 5 km from a health facility will be much less than the 80% stated above.

However, as stated earlier, with a population density of only 2 persons per square kilometer, diseconomies of scale and size are likely to be widespread, thus inflating the costs of running a health facility. In turn, this scale inefficiency is likely to constrain the amount of resources available for taking the facilities close to the people. This problem has necessitated the establishment of outreach services/mobile clinics.

The country's input-to-population ratios are good by the standards of sub-Saharan Africa. These are shown in Table 1 below.

Table 1
Input-to-population ratios public and private

Input category	Number	Per 100 000 population
Doctor	528	30
Pharmacist	155	9
Dentist	89	5
Radiographer	50	3
Registered nurse	2719	153
Physiotherapist	47	3
Occupational therapist	34	2
Social worker	197	11
Health inspector	70	4
Hospital bed*	6,742	379

Source: Draft Ten-Year Strategic Human Resource Plan (MoHSS)

*Essential Indicators 2000/01 and for public sector only

The average ratios described above, however, do not reveal the reality. There is a wide inter-regional variation that typifies the duality of the Namibian society. Reference to two regions of the country clearly illustrates this fact. Whereas a doctor serves for only about 3,000 people in Khomas – a region where the capital city is located, there are more than 22, 000 people per physician in the Ohangwena Region. The same trend holds true for the other health resources such as nurses and health facility beds.

An average per capita visit to a health facility of 1.5 is registered for the period 1995-99 (el Obeid *et al* 2001). Although this might compare favourably compared to those of most African countries, it falls short of the visits per capita of 2.5 that is often recommended within the context of developing countries. It has to also be noted at this juncture that these average figures conceal a lot of useful information which is necessary to evaluate existing health policies and plans in terms of their equity implications. Disaggregating by measures of socio-economic status (e.g. income quintile, education, area of residence *etc*) may give a better informative picture. Utilization of selected preventive services is given in Table 2 below. Where data are available, it will be attempted to disaggregate the information.

Table 2
Utilization of selected preventive services and their trends

Service	Value	
	1992	2000
Immunization coverage, children 12-23 months (%)	58	65
Contraceptive prevalence (%)	23.3	37.8
Antenatal care, provided by doctor/nurse (%)	87	91
Assistance at delivery, by doctor/nurse (%)	68	78
Women who received at least one dose of tetanus toxoid (TT) (%)	61	85

Source: DHS, MoHSS 2000

From the above table it can be discerned that there was a significant increase in the utilization of preventive services over the period noted. However, a breakdown of the data by various attributes of the population exhibits some striking difference in utilization and that reliance only on the above average figures might not give a picture of the whole situation. For example for TT, while the rate for those women who have completed secondary education and above is 99%, the figure for those with no education is only 60%. Similarly, by area of residence, whereas the figure is about 97% for urban areas, it is only 78% for rural women. Similar trends are seen in the other measures presented in the above table, albeit to differing magnitudes.

3.6. Major challenges

Although the country's health system has made remarkable strides towards increasing access to good quality health care to all the people of Namibia, there are still some challenges that need to be tackled. The notable challenge is that of curbing the epidemic of HIV/AIDS and its negative repercussion. As stated earlier, non-communicable diseases are also assuming a significant weight in the disease burden, thus necessitating preparedness of the health system to handle the epidemiological duality.

4 METHODOLOGY

4.1 Identification of stakeholders

The initial process commenced with the development of an inventory list of companies, ministries, non-governmental organizations and donors or development partners. The compilation of the inventory list was developed in collaboration with Namibia National Chamber of Commerce and Industries, the Ministry of Trade and Industries and the Employers Federation of Namibia.

4.2 Methods of Data Collection

4.2.1 Preparatory phase

Two sensitization meetings were held prior to data collection. During the first meeting about 47 companies were represented. The second meeting was held in October 2002. At this meeting more than 50 companies were represented. The first objective was to make companies/sectors aware about what National Health Account is all about, and secondly to appeal for their cooperation during data collection process. The questionnaires were introduced to potential respondents at these meetings.

4.2.2 Data collection tools

A data collection plan was developed which indicates data source and what type of data required and the time frame for its collection. This was done to ensure that identification of tasks and the timely completion thereof.

Five types of questionnaires for different sectors/companies were developed by the National Health Account team. These included questionnaires for:

- Health Insurance Companies
- Donors/Development Partners
- Employers
- Other Government Ministries
- Ministry of Health and Social Services
- Non-governmental Organizations

4.2.3 Fieldwork

Fifteen fieldworkers with previous survey experience underwent a three days training before they were send into the field. Their training concentrated on understanding the questionnaires and some basic NHA terminology so that they were in a position to answer possible questions by respondents. Mock interviews were practiced by the enumerators to ensure comprehension on how to conduct the interviews. The questionnaires were distributed by hand by the enumerators to the different organisations that were identified for the study, especially in Windhoek. Each enumerator was assigned a cluster of organisations to visit; making appointments with

the respondents, taking the questionnaires and collecting them back. Other methods, such as e-mail were also used to distribute the questionnaires.

The data collection process took about two months to complete. Questionnaires were checked, and verified for data accuracy and incompleteness.

4.2.4 Sampling

More than 111 organisations were identified for the study, of which 106 responded. For an organisation to be surveyed for the purposes of this study, it was a requirement that it should have the potential to either fund, be an agent of, or provide health service.

Table 3
Breakdown of Organisations

Categories of companies	Number of companies	Number responded
Health Insurance Companies	9	9
Donors*	12	11
Employers/Private Companies	70	68
NGO's	8	6
Other Government Ministries	11	11
Ministry of Health & Social Services	1	1
TOTAL	**111**	**106**

*bilateral and multilateral

4.2.5 Data entry and analysis

Data obtained were checked for completeness. Inaccuracies and gaps in data provided were verified with relevant organizations. A template in micro soft excel software was developed which was used to capture data from different organization. For analysis a T – account[6] was used to record revenues and expenditures and this data was then entered into tables.

Four standard tables were used to analyse data: This include:

- Sources to Financing Agents (SxFA)
- Financing Agents to Providers (FAxP)
- Financing Agents to Functions (FAxF)
- Financing Agents to Inputs (FAxI)

Two other tables were also used. One focused on the MOHSS (money spent by line item). The last one was on the Regional Distribution of funds to all thirteen Regional Management Team. Excel software was used in the analysis.

[6] A T-account is a tool used to check whether every bit of spending on health by a financing agent is matched by revenue from some source. Expenditures are listed on the left side of the account and revenues on the right side.

With regard to household expenditure on health, results from the Namibian National Household Income and Expenditure Survey of 1993/94 and the Preliminary National Accounts 2001 were used to estimate the out of pocket expenditure share of private final consumption.

4.3 Limitations of the study

Despite conducting two stakeholders' sensitisation workshops prior to the commencement of the study, the exercise did not go without difficulties. Some institutions refused to co-operate in providing the required information and some of data that was obtained was incomplete.

The respondents have reported their expenditures on health using different financial years. As the Ministry's financial year runs from April to March all other respondents financial years information were adjusted to coincide with the government financial year. This was adjusted by dividing the respective companies' expenditures by 12, assuming a constant monthly expenditure.

The financial information from the MoHSS was in a format (line item) that is not convenient to disaggregate by sub–classification in the FA X F matrix (Financing agent to functions matrix). For instance, the line item materials and supplies, it was not possible to identify the amount of money used for purchasing of drugs or stationary and or cleaning materials.

5. RESULTS

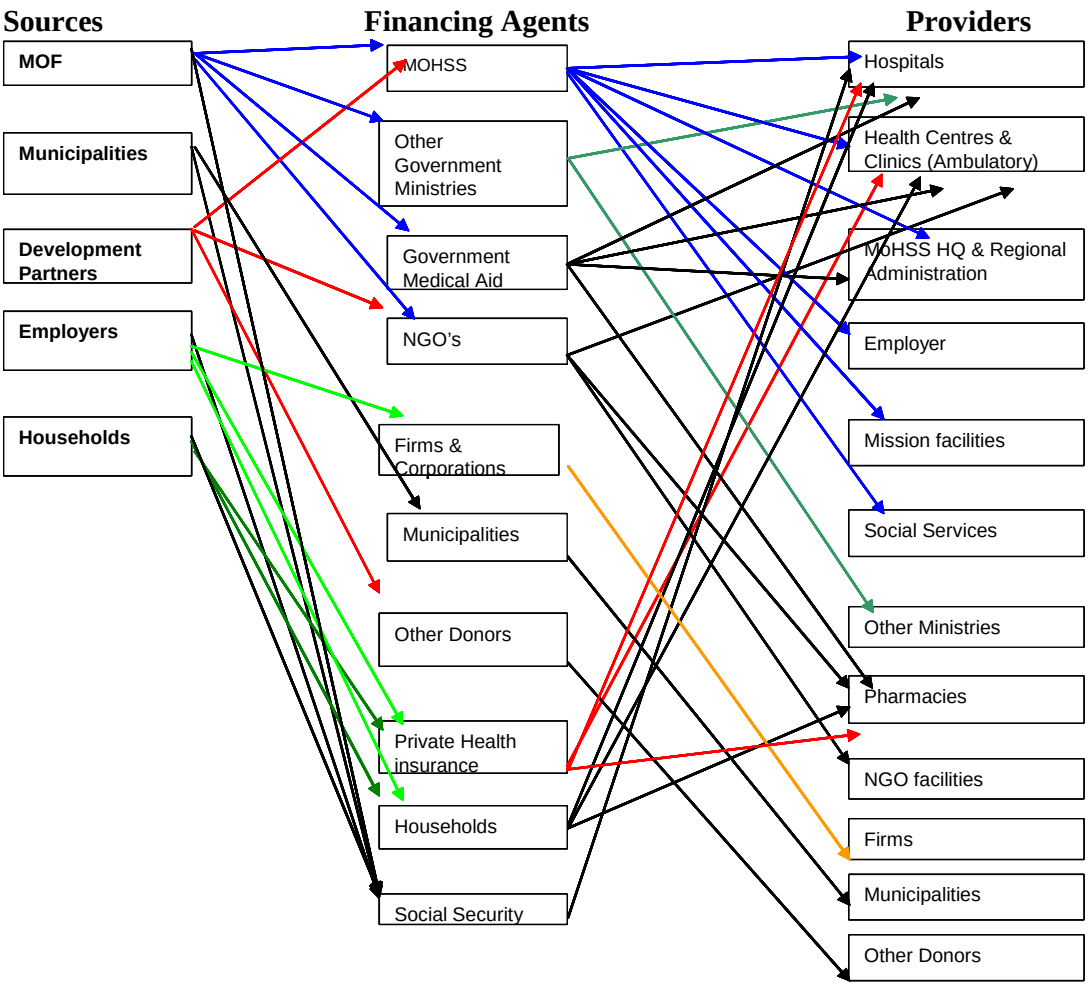
5.1 Introduction

This section presents the findings and discusses their policy implications. The matrices highlighting the details for the FY 1999 – 2001 are provided in Annexes 1 – 8. In addition to the usual NHA matrices, an attempt is made to do equity and efficiency analysis with the limited data.

5.2. Flow of funds

The flow of health resources in Namibia involves three levels, namely, financing sources, financing agents and providers. The sources of funds in health care services are both public and private. The public sources include Ministry of Finance, and municipalities. The private sources are employers, households and donors. Unlike in many other countries, funds do not directly flow from sources to providers; funds always pass from financing agents to the providers of services. Figure 2 depicts the flow of funds through the various levels

Figure 2
Flow of funds through the various levels



To further elaborate the above figure will be discussed by taking the case of the MoHSS. The MoHSS as a financial agent receives its funds from the MoF and development partners (hence the two arrows emanating from both the sources). It then distributes the resources to providers including hospitals, health centers and clinics (ambulatory care), employer, MoHSS headquarters and Regional administration, mission facilities and social services (see arrows). The diagram is thus a schematic presentation that helps understand the flow of funds in the system.

5.3 Total Health Expenditure (THE)

For the period 1998 – 2001 the country's total health expenditure per capita was in the range of N$ 753 – N$ 908 (US$, 128 - US$ 154 at constant 1998 NS/U$ exchange rate). Although there was an increase in the per capita total health expenditure in nominal terms, the depreciation of the N$ that was experienced in the given period meant that the amount available for the import of needed factors of production (e.g. medicine) was declining. Table 4 below presents the total health expenditure for the period under consideration.

Table 4
Per Capita Total Health Expenditure

Years	THE N$	THE at 1998 N$/US$ exchange	International Dollars (PPP)*
1998/99	781	128	304
1999/2000	858	141	334
2000/2001	930	154	362

*Purchasing Power Parity[7] 1995- 2000, WHO

Namibia's total expenditure on health as percentage of GDP is a little higher than 6%. This deviates slightly from what is reported by international organization such as WHO, which put the total health expenditure as a percentage of GDP in the order of 7.5%. Namibia's total health expenditure per capita is favourable compared to those of many countries in the region. Table 5 below shows a comparison of total health expenditure of selected countries in the region.

Table 5
Total Health expenditure as % of GDP and per capita 1998, selected countries

Country	Health expenditure per capita, US$	Health expenditure as % of GDP
Kenya	29.6	7.6
Malawi	12.4	7.0
Mozambique	8.4	3.8
Namibia*	**128**	**6.2**
South Africa	220.9	7.0
Zambia	20.6	6.1
Zimbambwe	59.4	11

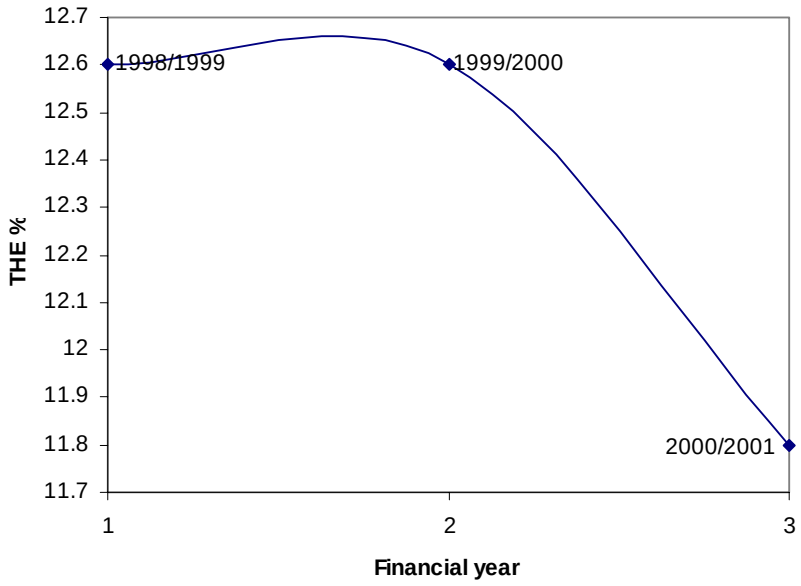
Source: Malawi – NHA Team August 2001, *Namibia – NHA 2003

[7] A PPP (international dollar) exchange rate is the number of units of a country's currency required to buy the same amounts of goods and services in the domestic market as U.S. dollar would buy in the United States. A doctrine which asserts that a unit of currency should be able to buy the same bundle of goods in all countries.

As can be seen from the above table, Namibia's total health expenditure as percentage of GDP is surpassed by many of those countries listed. However, when seen in absolute terms, Namibia is in a much favorable position ranking second to South Africa.

The findings of this study indicate that health is one of the sectors that is accorded high priority. The government has been allocating more than 11% of its budget for health activities. Although the total health expenditure per capita has been increasing in absolute terms (from N$ 781 to N$ 930), its percentage share in total government budget has been on the decline. This can be observed from the figure below.

Figure 3
Public total health expenditure as percentage of Government budget, 1998/99 - 2000/2001



Despite the trend observed from the above figure, Namibia's total health expenditure as percentage of government budget compares favourably with those of many countries in Eastern and Southern Africa Region. To illustrate this, Table 6 presents a comparative data.

Table 6
Public total health expenditure (PTHE) as % of total government expenditure, selected countries 1998

Country	PTHE* as % of total government expenditure
Ethiopia	6.0
Kenya	6.0
Malawi	10.0
Mozambique	5.0
Namibia	**12.6****
Rwanda	3.0
South Africa	14.0
Tanzania	9.0
Uganda	5.0
Zambia	10.0

Source: Nabyonga *et al* (N.D)
*public total health expenditure
** For Namibia the data is for 1998/99

As can be seen most of the countries indicated above spent less than 10% of total government expenditure on health. Namibia's expenditure on health which is close to that of neighbouring South Africa is by far higher than those of the countries listed. Namibia's total health expenditure as percentage of government expenditure is close to the Abudja pledge by the African Heads of State which recommends that African governments should spend about 15% of their total budgets for health.

During the reporting period the MoHSS' government allocation showed an increase, although at a decreasing rate. While the budget increased by about 16% in 1999/2000 compared to that in the preceding financial year, the increase in 2000/2001 over that of 1999/2000 was only about 10%. This can be observed from Table 7 below.

Table 7
Social welfare vs. health programme budget

	FY		
	1998/99	**99/2000**	**2000/2001**
MoHSS Total budget	1,071,933,504	1,247,409,274	1,367,524,043
% Social welfare	18.6	20.2	22.8
% Health programme	81.4	79.8	77.2

Furthermore, the above table shows that the percentage of the budget allocated to social welfare was increasing at a greater rate compared to that allocated to health programmes. This implies that resources for health programmes are diminishing in real terms, a trend that needs to be revisited.

Over the reporting period Government as a source of funding has been the largest contributor of total health expenditure. This information is depicted in Table 8 as follows.

Table 8
Percentage share of various sources of finances

Source	FY 1998/99	FY 1999/2000	FY 2000/2001
Public	69.7	70.9	65.7
Private	27.7	26.6	30.5
Donors	2.5	2.5	3.8

As can be discerned from the above table, the share of non public funds in the total health expenditure is relatively small. However, over the period under review the role of the private sector as well as donor funds has increased remarkably. The fact that funds from private sources are low implies that the possibility for catastrophic out of pocket payments is minimal. For example in 2000/2001 the out of pocket payment component of the private sources was about 5.6% of the total health expenditure. This is corroborated by a multi-country study that assessed the magnitude of catastrophic out of pocket payments[8] (Xu *et al* 2003). Out of 59 countries studied by the World Health Organisation, Namibia had one of the lowest measures of catastrophic out of pocket payments implying that equity in health financing is not compromised.

Development partners' contribution which is in the form of grants is channeled directly to government agencies (mainly MoHSS), NGO's and other development partners. As can be seen from Table 8 the contribution of development partners to total health expenditure is minimal. This has far reaching implications for the sustainability of the health system – unlike the health systems of many countries in Sub-Saharan Africa, dependency of the Namibian health system on donor funds is very little. This can be observed from Table 9 below.

Table 9
Contribution from various sources (%) 1998, selected countries

Country	Public	Donor	Private
Ethiopia	39.0	9.0	53.0
Kenya	28.0	9.0	64
Malawi	34.0	33.0	33.0
Mozambique	22.0	52.0	26.0
Namibia	**69.7**	**2.5**	**27.7**
Rwanda	10.0	51.0	40.0
South Africa	47.0	0.0	53.0
Tanzania	23.0	25.0	52.0
Uganda	21.0	43.0	36.0
Zambia	42.0	25.0	33.0

Source: Nabyonga *et al* (N.D)

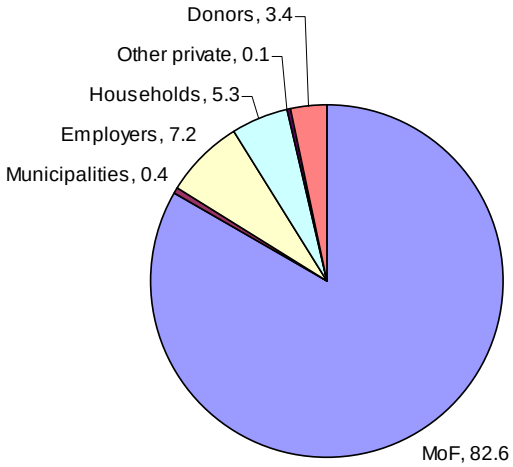
The percentage contribution from public sources is significantly high in comparison with the selected countries. However, public resources are vulnerable to changes in revenue collection, and this can have a detrimental effect on the provision of health services.

[8] Catastrophic out-of-pocket payment is defined; if a household's financial contributions to the health system exceed 40% of income remaining after subsistence needs have been met.

5.4 Source to financing agent

The main source of finance for the years under consideration is the Ministry of Finance. It accounts for over 80% of all finances earmarked for health. This is clearly illustrated in Figure 4 which is for the FY 2000/2001.

Figure 4
Sources of Financing (% share), 2000/01



Relative to other sources private insurance and households play an important role as sources of health finance. An important observation from the above figure is that the Namibian health system is predominantly tax-funded. This implies that factors affecting economic performance and the efficiency of tax collection can significantly affect allocation of funds to the health sector.

It is observed that donor funds are mainly allocated to the public sector (about 95%). The share of allocation of donor funds to NGO's and other development partners is minimal. Table 10 depicts the flow of funds from financing sources to financing agents.

Table 10: Financing Sources x Financing Agents (S x FA) 1998/99

	S.1 Public Funds*		S.2 Private Funds*				S.3	Column totals
	Total	S.1.1.1 Min.of Finance	S.1.2 Municipal gvt. revenue	S.2.1 Employer funds	S.2.2 Household funds	S.2.4 Other private funds	Rest of the world funds (donors)	
HF.1.1.1 Central government:								
HF.1.1.1.1 Ministry of Health & Social Services		1,071,933,504					31,166,626	1,103,100,130
HF.1.1.1.3 Ministry of Labour		1,543,321						1,543,321
HF.1.1.1.4 Ministry of Defence		5,778,153						5,778,153
HF1.1.1.5 Ministry of Corrections and Prisons		2,431,396						2,431,396
HF.1.1.1.6 Ministry of Fisheries		256,248						256,248
HF.1.1.1.7 Ministry of Home Affairs		17,631						17,631
HF.1.1.1.8 Ministry of Foreign Affairs		250,000						250,000
HF.1.1.1.9 Ministry of Agriculture		18,436,869						18,436,869
HF.1.1.3 Municipal government			4,891,785					4,891,785
HF.1.2 Social security funds		5,274,567		7,204,287	385,944	***	***	12,864,798
HF.2.1 Private social insurance (Govt.employees)		162,430,439				***	***	162,430,439
HF.2.2 Private insurance				82,879,418	11,077,745	7,344,210	***	101,301,373
H.2.3 Households Out-Pocket					77,362,852			77,362,852
HF.2.4 NGOs		400,000					3,177,326	3,577,326
HF.2.5. Firms & Corporations				11,923,537				11,923,537
HF.3 Rest of the world (donors)							678,586	678,586
TOTAL		1,268,752,128	4,891,785	102,007,242	88,826,541	7,344,210	35,022,538	1,506,844,444

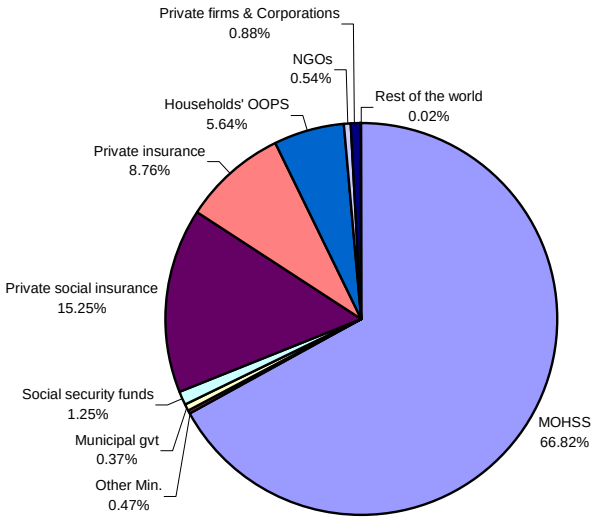
5.5 Financing agents to providers

Financing agents are institutions which receive funds from sources and transfer these funds to health care providers. In Namibia these include MoHSS, Other ministries (MoD, MBESC, MAWRD, MoL, MFMR), municipal governments, social security commission, private social insurance, private insurance, household out-of-pocket payment, NGO, private firms and corporations and the rest of the world. It should be noted that some of the financing agents are also sources of finance.

Providers are institutions, which produce and/or provide health care goods and/or services for the benefit of individuals or the population as a whole. The providers are the following: hospitals, ambulatory health care, pharmaceuticals, administration of public health programmes, general health administration and insurance, other industries, health related services, rest of the world and those not elsewhere specified.

For the period under consideration the major financing agent has been the MoHSS, which accounts for about two thirds of the funds disbursed to the various providers. Private and social insurance also play a significant role as financing agents and make up about a quarter of the funds disbursed to providers as depicted in Figure 5.

Figure 5
Percentage share of financing agents, 2000/01



As can be seen from Figure 5 the role played by the other financing agents is not substantial.

In comparison to other countries in the region, insurance in Namibia plays a major role as a financing agent. In most countries in the Africa region with published information on NHA, it is indicated that the insurance sector is weak or non-existent. In those who have it, it accounts for less than 10% (e.g. Kenya 7%)[9]. This however, is with the exception of South Africa where the insurance component accounts for about 42% (Private insurance 41% and social insurance 1%).

It has to be noted that both the Social Security Commission and the Government medical aid scheme are involved in social health insurance component. This is likely to escalate overhead costs and forego economies of scale and specialization. Hence, the issue of having a unified social health insurance needs to be explored.

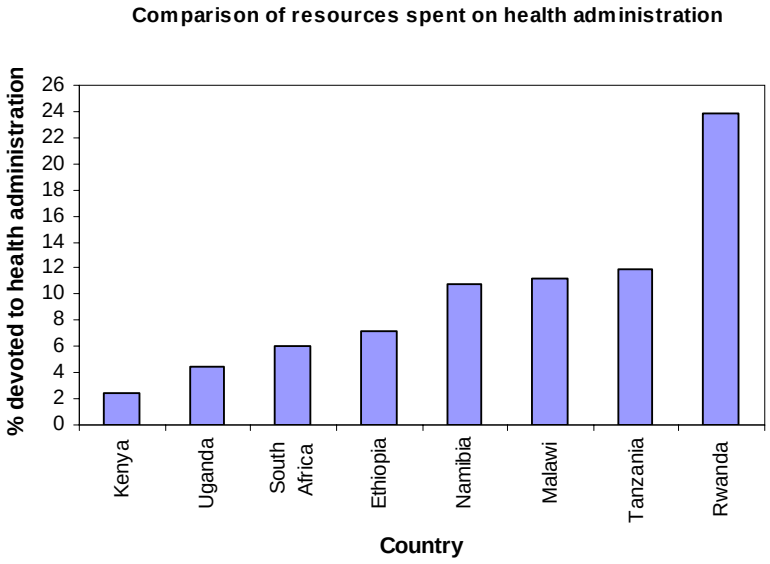
Hospitals are the main recipients of health resources from the financing agents. They receive from 40% – 45% of total general health expenditure. During the period considered the amount earmarked to hospitals declined by about 5 percentage points. Reports indicate that the number of hospitals within the MoHSS has decreased from 45 to 34 during the period 1990 to 2003 (MoHSS Administrative records). This move may partly explain the decline in the share of funds allocated to hospitals. The transfer of funds from financing agents to providers is presented in Table 11.

[9] Sum of private and social insurance

Table 11
Transfer of funds to providers

Providers	FY 1998/99	FY 1999/2000	FY 2000/01
Hospitals	45.0	45.3	40.2
Ambulatory health care	13.9	14.6	15.9
Public health programmes	1.9	2.9	4.1
Health administration	10.8	9.7	9.3
Health related services	7.5	5.9	6.8
Not elsewhere specified	14.1	14.9	16.2

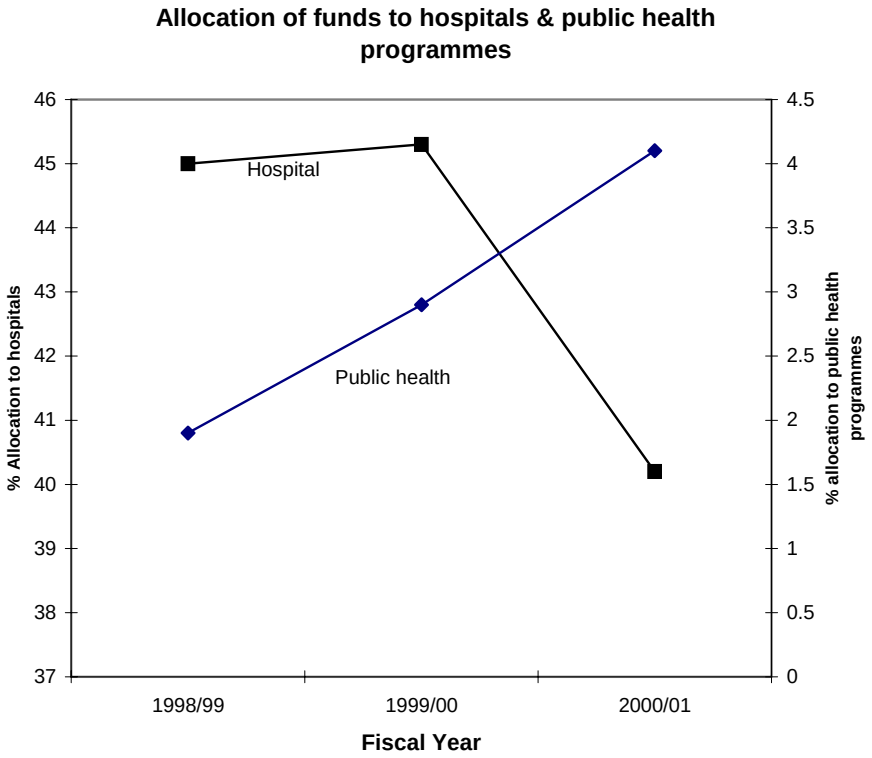
Over the three years period the share of health administration has shown a trend of decline, albeit marginally. A comparison with other countries in the Eastern and Southern Africa (ESA) Region indicates that resources spent on health administration are a little higher than those of South Africa, but much lower than Tanzania and, Malawi. This is presented in Figure 6 below.



Source: Nabyonga *et al* (N.D.)

It is observed that the percentage devoted to health administration in Namibia in FY 1998/1999 is a little above the median (7.2%) for the countries represented above. Caution should however, be exercised in interpreting the above figure as it relies on only on one point in time (1998) due to the lack of comparable time series data

Transfer of funds to public health programmes has shown a relatively substantial increase. This may reflect a re-allocation of resources away from hospital based curative services towards public health programmes in line with the Ministry's health policy framework which is based on the principles of PHC. Although this is a trend in the right direction, more needs to be done in this regard. For a better illustration, this is depicted in Figure 7 below.



It is striking to note the low percentage of expenditure with regard to public health programmes despite Namibia's health policy being based on the tenets of Primary Health Care approach. However, this may be underestimated slightly as hospitals and other providers of ambulatory health care also undertake Primary Health Care activities. At this juncture it is not possible to estimate the proportion spent by hospitals and other providers for PHC activities. This calls for the development of a financial information system that addresses this need.

Out of the total expenditure on hospitals, the bulk of the funds (about 82.3%) come from public sources, especially the MoHSS. The private sector spends about 34% of its total resource envelope on hospital services compared to about 50% spent by the public sector. This is not unexpected, given the fact that most private services are clinic- (consulting room-) based, and private providers make use of public sector hospitals and existing few private hospitals for advanced medical interventions. Table 12 depicts the flow of funds from the financing agents to providers of health care.

Table 12: Financing Agents x Providers (FAXP), 1998/99

	HF.1 General Government				HF.2 Private Sector					HF.3	Row totals and total expenditure measures
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5		
	HF.1.1.1.1 MOHSS	HF1.1.1.1.2 Other Min.	HF.1.1.3 Municipal gvt.	Social security commission	Private social insurance	Private insurance enterprises	Household's out-of-pocket payment	NGOs serving households	Private firms and corporations	Rest of the world	
HP.1 Hospitals*	564,454,204	1,372,200			23,486,088	66,145,000	23,208,856				678,666,348
HP.3 Providers of ambulatory health care*	101,907,371	1,015,977			58,715,220	9,449,286	38,681,426	27,861			209,797,141
HP.4 Retail sale and other providers of medical goods	20,904,000				35,229,132	18,898,571	15,472,570				90,504,273
HP.5 Provision and administration of public health programs	14,558,796	13,602,494	307,860								28,469,150
HP.6 General health administration and insurance	94,166,890		3,216,838	12,864,798	45,000,000	6,808,516		352,326			162,409,368
HP.7 All other industries									11,923,537		11,923,537
HP.8 Institutions providing health related services *	107,836,737	2,343,536	822,022					1447062			112,449,357
HP.9 Rest of the world										678,586	678,586
Not elsewhere specified	199,272,132	10,379,411	545,065					1,750,077			211,946,685
Column totals	**1,103,100,130**	**28,713,618**	**4,891,785**	**12,864,798**	**162,430,440**	**101,301,373**	**77,362,852**	**3577326**	**11,923,537**	**678,586**	**1,506,844,445**

5.6 Expenditures by functions

Functions are program activities or services rendered by health care providers to alleviate the health problems of individuals or population and/or activities undertaken by population group with the primary objective of improving or maintaining health.
In the Namibian context, the application of the OECD taxonomy for classifying functions was used. However the use of sub-classification of functions was difficult. For example, in the sub-classification medical goods dispensed to outpatients [HC.5] it was difficult to apportion the amount that was used for pharmaceuticals and that which was used for therapeutic equipment. Secondly, categorizing expenditure by level of care (primary, secondary and tertiary) was not possible. However, a broad approach has been adopted to categorize these expenditures. Thus eleven categories of major functions were identified in this study. These includes curative and rehabilitative care, ancillary services to medical care, medical goods dispensed, public health services, administration, capital formation, education and training, research and development, food, hygiene and drinking water control, environmental health and other functions.

Analysis of total health expenditure by functions reveals that the greatest proportion of the expenditure (almost three quarters) goes to curative and rehabilitative care. In this context curative and rehabilitative care includes those curative and ambulatory services provided in hospitals, health centers, clinics and offices of health practitioners. Although it might have been more illuminating to treat expenditure on curative services [HC.1] separately from those for rehabilitative care [HC.2], in our case the lack of disaggregated data rules this out.

Table 13
Distribution of total health expenditures by function

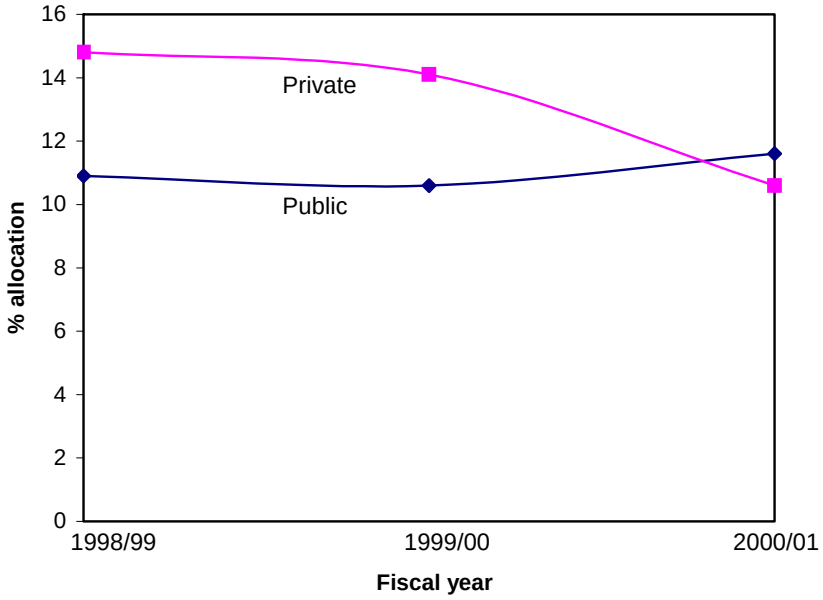
Functions	FY 1998/99 % expenditure	FY 1999/2000 % expenditure	FY 2000/2001 % expenditure
Curative and rehabilitative	70.7	72.4	68.8
Ancillary services medical care	1.6	1.6	1.8
Medical goods dispensed	5.5	5.4	6.5
Public health services	1.5	2.3	3.7
Administration	12.0	11.5	11.3
Capital formation	8.7	6.8	7.9

As it was discussed earlier in Section 5.4, the above table also indicates the trend on expenditure on curative and rehabilitative care compared to expenditure on public health services. The proportion spent on medical goods dispensed seems to be very low compared to those of other countries such as Ethiopia (43%) and Uganda (14%) (Demissie *et al* ND, Ministry of Health – Uganda 2000). The Namibian situation in this regard does not reflect the reality as the amount spent on medical goods dispensed could not be retrieved separately, i.e. it is subsumed in the functional category of curative care [HC.1]. This is a shortcoming of the prevailing information system that needs to be addressed in the future.

Analysis of the private sector data reveals that about a quarter of the sector's total health expenditure is spent on medical goods dispensed. With respect to

administration costs, the trend in the private sector shows a decline, while that of the public health sector indicates an increasing tendency (Figure 8).

Figure
Percentage allocation for administration - public vs private



If the trend depicted in the above figure continues, it may not be desirable as it may divert resources away from the programme activities to financing overhead costs.

Capital formation is capital investment expenditure of health care providers. The total estimated expenditure for the three years under review was N$ 111 million, N$ 98 million and N$ 131 million. This gives an average of N$ 113 million a year. In the NDP 2 section on Health and Sanitation, the Public Sector Investment Programme (PSIP) expenditure for the period 2001/2- 2005/6 is estimated at about N$ 697 million. This implies a yearly requirement of about N$ 139 million. Thus there is a substantional resource gap of N$ 26 million between what is needed and the present capital expenditure. It should be noted at this juncture that the PSIP in NDP 2 refers only to capital expenditure needs of the MoHSS. Hence, it can be visualized that if the health system as a whole (including the public and private sector) is considered, the resource requirement becomes even greater. Thus there is a need for allocating higher amounts to capital formation if the targets of NDP 2 are to be realized. The flow of funds from financing agent to functions is depicted in Table 14.

Table 14: Financing Agents x Functions (FAXF), 1998/99

	HF.1 General Government				HF.2 Private Sector					HF.3	Row totals and total expenditure measures **
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5		
	HF.1.1.1.1 MOHSS	HF1.1.1.2 Other Min.	HF.1.1.3 Municipal gvt	Social security funds	Private social insurance	Private insurance	Households' OOPS	NGOs	Private firms & Corporations	Rest of the world	
HC.1 and HC.2 Services of curative care and rehabilitative care	666,361,575	2,388,177			82,201,307	75,594,286	61,890,282	27,861	11,923,537		900,387,025
HC.4 Ancillary services to medical care	20,904,000										20,904,000
HC.5 Medical goods dispensed to out-patients					35,229,132	18,898,571	15,472,570				69,600,273
HC.6 Prevention and public health services	14,558,796	3,160,913	305470							678,586	18,703,765
HC.7 Health administration and health insurance	84,116,890		3,216,838	12,864,798	45,000,000	6,808,516		352,326			152359368
Subtotal: TCEH	**785,941,261**	**5,549,090**	**3,522,308**	**12,864,798**	**162,430,439**	**101,301,373**	**77,362,852**	**380,187**	**11,923,537**	**678,586**	**1,161,954,431**
Plus: HCR.1 Capital formation of health care provider institutions	107,836,737	2,837,186	487,156								111,161,079
Equals: THE	**893,777,998**	**8,386,276**	**4,009,464**	**12,864,798**	**162,430,439**	**101,301,373**	**77,362,852**	**380,187**	**11,923,537**	**678,586**	**1,273,115,510**
Plus: HCR.2 Education and training of health personnel	10,000,000	827,267	2390					837,327			11,666,984
HCR.3 Research and development in health	50,000							26,376			76,376
HCR.4 Food, hygiene and drinking water control		11,907,850	334866								12,242,716
HCR.5 Environmental health		50,000						583,359			633,359
Other functions not specified elswhere	199,272,132	7,542,225	545065					1,750,077			209,109,499
Equals: GEH	**1,103,100,130**	**28,713,618**	**4,891,785**		**162,430,439**	**101,301,373**	**77,362,852**	**3,577,326**	**11,923,537**	**678,586**	**1,506,844,444**

5.7 Expenditure shares to different types of health care inputs

Expenditures reported here refer to expenditures incurred on key health care inputs such as personnel emoluments, drugs and medical supplies and capital formation. Table 15 presents the percentage distribution of funds among the different inputs.

Table 15
Percentage distribution of funds by inputs - MoHSS

Line item	Fiscal year		
	1998/99	1999/00	2000/01
Personnel emolument	59	59	51
Drugs and medical supplies	8	8	9
Other recurrent expenditure	22	24	28
Capital formation	9	9	12

The table above shows that more than half of the funds are consumed by personnel costs. Although this is expected in a sector which is labour intensive, the Namibian situation highlights that personnel costs are far higher than some countries used for comparison in Table 16.

Table 16
Comparison with selected countries on expenditures by inputs (%)

Country	Line item			
	Personnel emoluments	Drugs & medical supplies	Other recurrent expenditures	Capital expenditure
Malawi	39	17	42	3
Mozambique	41	5	44	9
Namibia*	59	8	22	9
South Africa	66	14	14	5

Source: Nabyonga *et al* (N.D)
* Namibia NHA Report 2003

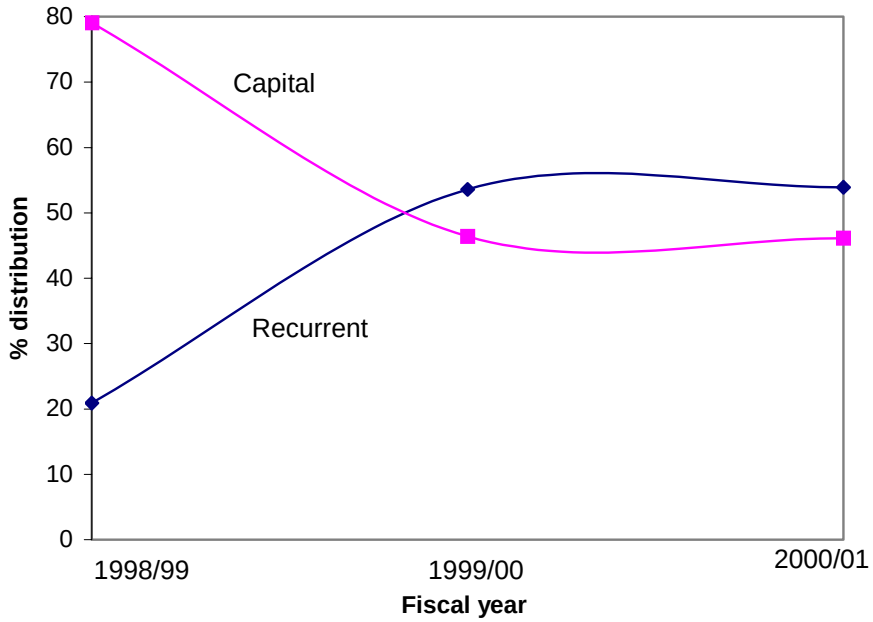
As can be seen from the above table, personnel emoluments are the highest in Namibia and South Africa – countries which are categorized in the middle income group. There seems to be a positive relationship between personnel costs and the income status of the country. Personnel emoluments are far lower in the two low income countries cited above.

There is a high expenditure on personnel costs relative to expenditure on drugs and other medical supplies. Hence there is no optimal input mix. This is likely to result in the lack of complementary inputs and slackening of labour productivity. Thus, an

optimal combination of inputs for service delivery should be considered and a balance should be sought between human resources and other inputs.

Over the three years period the proportion of donor funds divested to recurrent expenditure has been increasing compared to capital formation. This can be seen from Figure 9 below.

Figure ***
Distribution of donor funds by line item



It can be seen from the graph that during the period under consideration the proportion of donor funds allocated to recurrent expenditure has increased dramatically (about 33 percentage points). In contrast, the share devoted to capital expenditure has dropped by the same rate. This trend may perhaps indicate an appreciation by the donors of the recurrent cost implications of financing capital projects.

Table 17: Financing Agents x Inputs (FA x I), 1998/99

	HF.1 General Government				HF.2 Private Sector					HF.3
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5	
	HF.1.1.1.1	HF.1.1.1.2	HF.1.1.3							
	MOHSS	Other Min	Municipal gvt	Social security funds	Private social insurance	Private insurance enterprises	Private households' out-of-pocket payment	NGOs serving households	Private firms and corporations	Rest of the world
I.1 Compensation of employees	568,438,359	6,500,140								
I.1.1 Wages	517,911,210									
I.1.2 Social contributions	50,527,149									
I.2 Use of goods and services	320,505,141	33,234,127								
I.2.1 Material supplies	23,899,170	479,520								
I.2.1.1 Drugs and pharmaceuticals	95,596,679	819,840								
I.2.1.2 Other supplies										
I.2.2 Services	201,009,292	31,934,767								
I.3 Consumption of fixed capital										
I.4 Interest										
I.5 Other expenditure on inputs	6,590,805									
I.5.1 Other current expenditure	6,590,805									
I.5.2 Other capital expenditure	130,710,690	170,833								
I.5.2.1 Buildings	101,083,269									
I.5.2.2 Capital equipment	4,517,121									
I.5.2.3 Vehicles	5,352,622	155,000								
I.5.2.4 Not elsewhere satisfied	19,757,678	15,833								
I.6 Grants	82,316,193									
I.7 Social benefits	312,254,000									
Total expenditure	**1,420,815,188**	**39,905,100**								

5.8 MoHSS health expenditure by region

Budgeting is an essential component of the planning process. Through budgets resources are allocated to different activities and geographical localities. Within the context of the MoHSS the link between budgets and operational plans is not explicit. The national level gives the regions an indicative budget ceiling that must be strictly adhered to. However, more often than not the plans do not contain properly costed activities with clear and measurable expected results. The budgeting process within the MoHSS is predominantly of the historical incrementalist type. Thus, in the following discussion an attempt will be made to analyze the geographical distribution of the MoHSS resources and their potential equity implications. It must, however, be noted that the critical limitations of the required data do not allow a rigorous equity analysis.

The MoHSS structure with regard to health care delivery by geographical locality was based on four regional health directorates. Such health regional health directorate was responsible for 3-4 administrative regions. With the decentralization process the four regional directorates have been phased out by 2000 and 13 regional management teams are in place. Hence, for the FY 1998/99 and 1999/00 budgets were allocated to these directorates. For the NHA team to arrive at regional budget allocations extrapolations were made using long-linear model and proportionately allocating donor resources as well as the development budget to regions.

The average regional expenditure for the reporting period is estimated at N$ 700 million (see Table 18 below). Over the three year period the allocations to the regions increased by an annual average rate of about 23.5%. A cursory glance at the distribution reveals a huge gap, which was also observed to be increasing in regions receiving highest and lowest resource allocations.

Table 18
MoHSS regional expenditure on health

Region	Expenditure 1998/99	% of total	Expenditure 99/00	% of total	Expenditure 2000/01	% of total
Caprivi	41,199,768	7.8	54,164,711	7.1	25,973,102	3.2
Erongo	43,904,601	8.3	63,432,324	8.3	72,051,219	8.9
Hardap	46,019,155	8.7	62,626,274	8.2	53,543,907	6.6
Karas	44,757,926	8.5	65,043,011	8.5	58,805,909	7.3
Kavango	36,451,586	6.9	60,459,364	7.9	87,066,158	10.8
Khomas	28,272,884	5.4	40,417,915	5.3	50,249,512	6.2
Kunene	24,630,125	4.7	37,470,594	4.9	43,252,613	5.4
Ohangwena	42,330,974	8.0	63,936,894	8.4	70,377,103	8.7
Omaheke	17,608,357	3.3	26,221,496	3.4	31,740,464	3.9
Omusati	74,483,780	14.1	101,680,410	13.3	99,153,133	12.3
Oshana	16,539,349	3.1	22,871,342	3.0	23,496,661	2.9
Oshikoto	61,496,790	11.7	92,502,835	12.1	113,079,203	14.0
Otjozondjupa	50,022,474	9.5	72,048,338	9.4	76,398,014	9.5
Total	**527,717,767**	**100.0**	**762,875,509**	**100.0**	**805,187,000**	**100.0**

The above table highlights that, Omusati and Oshikoto regions have the highest percentage allocations, while Omaheke and Oshana have the lowest. The percentage

expenditure of Caprivi has declined from 7.8% in FY 1998/99 to 3.2% in FY 2000/01. This significant decrease appears anomalous as all other regions do not reveal such a significant change in expenditure and warrants a closer look.

The above table, however, would be more illuminating if at least regional population figures are taken into account. Hence, Table 19 presents the regional expenditures in relation to the population figures.

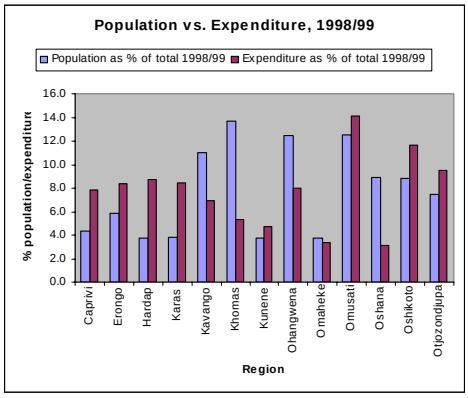
Table 19
Regional population vs. expenditure

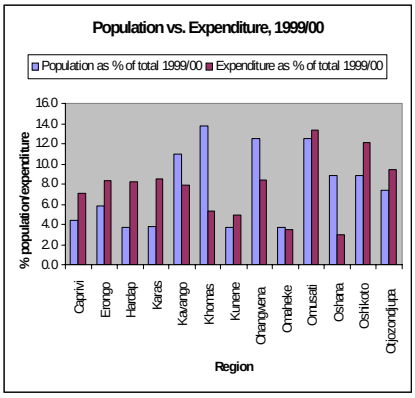
Region	Population as % of total 1998/99	Expenditure as % of total 1998/99	Expenditure as % of total 1999/00	Expenditure as % of total 2000/01
Caprivi	4.4	7.8	7.1	3.2
Erongo	5.9	8.3	8.3	8.9
Hardap	3.7	8.7	8.2	6.6
Karas	3.8	8.5	8.5	7.3
Kavango	11.0	6.9	7.9	10.8
Khomas	13.7	5.4	5.3	6.2
Kunene	3.7	4.7	4.9	5.4
Ohangwena	12.5	8.0	8.4	8.7
Omaheke	3.7	3.3	3.4	3.9
Omusati	12.5	14.1	13.3	12.3
Oshana	8.9	3.1	3.0	2.9
Oshikoto	8.8	11.7	12.1	14.0
Otjozondjupa	7.4	9.5	9.4	9.5
Total	100.0	100.0	100.0	100.0

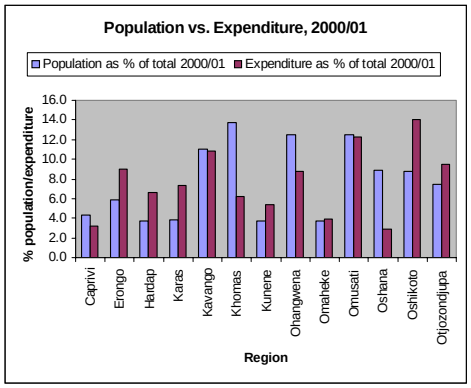
Inter-regional mobility of population is assumed to be not significant due to limited information during the inter-censal period.

As can be seen from the above table Karas, Hardap, and Erongo regions receive financial resources that are more than proportionate to their population. In contrast, Khomas, Oshana and Ohangwena receive less than proportionate to their population. The above information is depicted in Figure 10 below for a clearer observation. It should, however, be noted that for Khomas, Oshana and Kavango regions the expenditures are not inclusive of the referral hospitals, hence are underestimated.

Figure 10
Regional population vs. expenditure







If equity is to be defined in terms of equal expenditure per capita, then obviously there is an inequitable allocation of resources. However, a caveat is in order here; equal expenditure per capita does not take into account measures of need and cost differentials in providing health services in the different regions.

Table 20
Regional per capita income vs. per capita health expenditure, MoHSS 2000/01

Region*	**Per capita income N$****	**Per Capita expenditure N$*****
Ohangwena	1070	317
Omusati	1452	445
Caprivi	1598	334
Oshikoto	1680	722
Kunene	2203	650
Otjozondjupa	3659	578
Omaheke	3944	482
Erongo	5423	687
Hardap	5945	808
Karas	6655	866
National average	**3363**	**589**

* Khomas, Oshana and Kavango regions excluded as their hospitals serve as referral centers for other regions
Source: **Namibia Human Development Report 2000
***MoHSS - Finance Division

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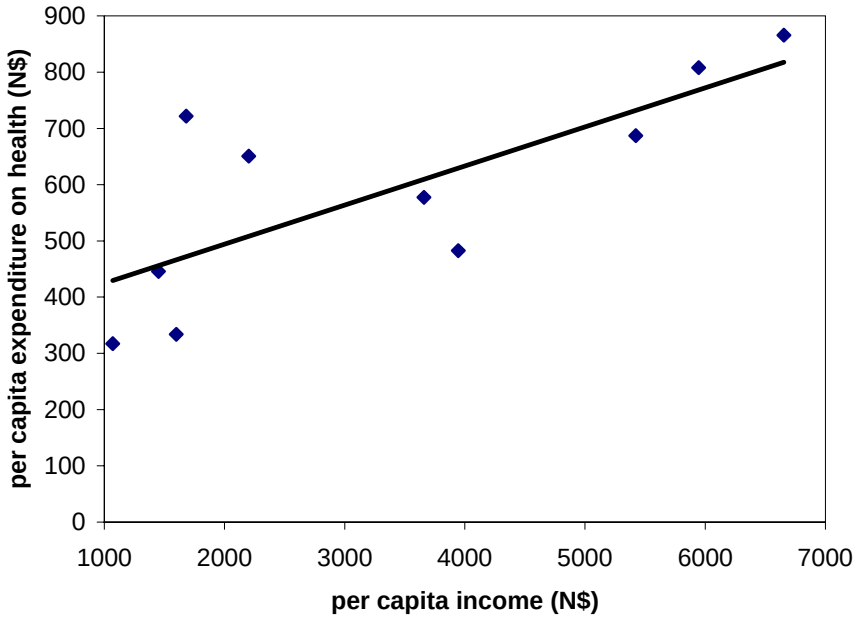
Furthermore, an analysis of the relationship between regional per capita incomes and per capita health expenditure of the MoHSS (Table 20) reveals that allocations to the well-off regions are higher compared to those of the low income region. In line with this there is a strong positive correlation between per capita income and per capita expenditure on health (r = 0.75). In calculating the correlation co-efficient Kavango, Khomas and Oshana have been excluded due to the fact that they have referral hospitals serving other regions. For further clarity this is presented in Figure 11 below.

Figure *
Regional per capita income vs. per capita expenditure, 2000/01



The above figure indicates that with the increase in the regional per capita income there is an increase in per capita expenditure on health. The relationship between poverty and health has been well established – poverty increasing the likelihood of illness. It would be expected to see more need for health care in regions which are the poorest (assuming that need is measured by the burden of illness). However, the data reveal to the contrary.

It can further be observed that about half of the regions have a per capita allocation which is less than the national mean of N$ 589. Most of these regions are located in the northern part of the country.

It is also worthwhile and illuminating to examine the Ministry's allocation of financial resources in relation to some indicators of deprivation and welfare. To this effect, the following table presents the regional Human Development Indices (HDIs) against the per capita regional allocations.

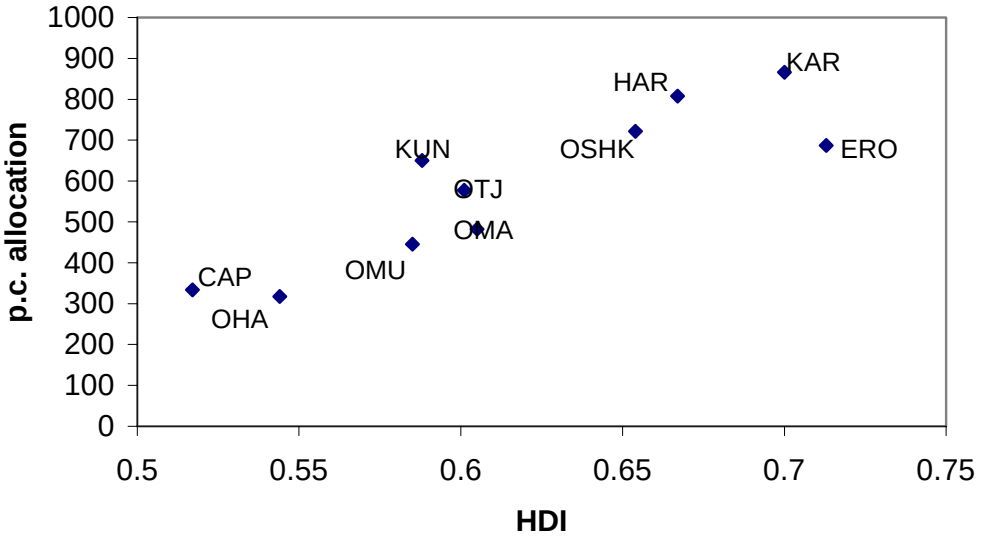
Table 21
HDI vs. per capita regional allocation

Region	*Per Capita allocation N$	Per Capita allocation USD	**HDI
Caprivi	334	44	0.517
Erongo	687	90	0.713
Hardap	808	106	0.667
Karas	866	113	0.700
Kunene	650	85	0.588
Ohangwena	317	41	0.544
Omaheke	482	63	0.605
Omusati	445	58	0.585
Oshikoto	722	95	0.654
Otjozondjupa	578	76	0.601
National	**589**	**77**	**0.648**

Source: *MoHSS - Finance Division
**Namibia Human Development Report 2000/2001

The above table indicates that regions with the highest HDI receive a relatively greater allocation from the MoHSS. Given the components of the HDI, a higher level of deprivation is expected to be present in areas where a relatively lower HDI is recorded. It is also expected that there is a higher disease burden in those regions with lower HDI. However, contrary to expectations there is a greater allocation in the regions which are relatively better off in terms of the HDI. The correlation co-efficient between the per capita allocation and HDI levels, which is in the order of 0.88 implies a strong positive relationship. In other words, this implies that as HDI levels increase so do per capita allocations. To further elucidate this, the following figure is presented.

Figure ****
HDI vs. per capita regional allocation



As can be seen from the above figure there is a clear pattern of positive relationship between the allocations and HDI levels. Regions such as Erongo and Karas with high HDI levels receive a greater amount of health resources compared to Caprivi and Ohangwena that have low HDI levels. The HDI being a measure of societal welfare, it is of paramount importance to use as a rough guide for allocating resources in the absence of other well researched allocation criteria.

To further strengthen the evidence it is also attempted to examine the relationship between the per capita regional expenditure in relation to some health outcome/welfare measures. These will include under five mortality and child malnutrition, particularly stunting[10].

Table 22
Stunting vs. per capita expenditure*, MoHSS 2000/01

Region	**Stunting	Per Capita expenditure N$	Per Capita expenditure USD
Caprivi	19.8	334	44
Erongo	8.7	687	90
Hardap	19.1	808	106
Karas	15.0	866	113
Kunene	18.3	650	85
Ohangwena	27.5	317	41
Omaheke	25.6	482	63
Omusati	26.5	445	58
Oshikoto	23.2	722	95
Otjozondjupa	17.4	578	76
National average	**23.6**	**589**	**77**

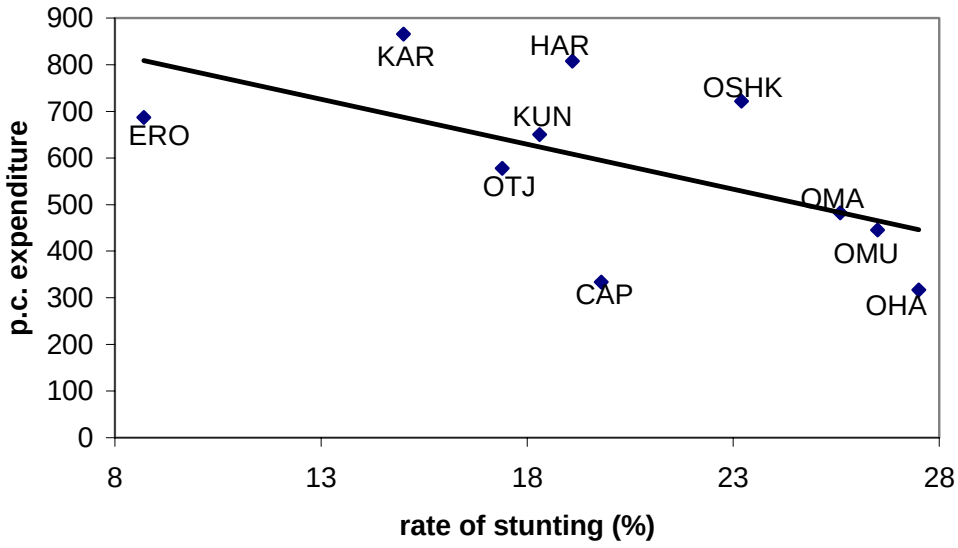
Source: **DHS, MoHSS (2000)

* includes both capital and recurrent expenditure

The above table again reveals that regions with stunting prevalence which is higher than the national average receive MoHSS allocation which is less than the national average. A high prevalence of stunting indicates high levels of overall socio-economic deprivation in the region. It is expected that there will be a higher need for health care for regions with high stunting indicators. The current trend, however, shows that this is not happening. The correlation co-efficient of -0.59 indicates that those with high levels of stunting receive lower allocation per capita. This is further elaborated using Figure 13 below.

[10] Stunting which is a low height-for-age (i.e. below two standard deviations from the international median height-for-age), is an indicator of long standing dietary inadequacy. The WHO (1986) recommends stunting as a reliable measure of overall social deprivation.

Figure ***
Stunting vs. per capita expenditure



The inverse relationship between the rate of stunting and per capita expenditure can be clearly seen from the fitted trend line in the above figure. This has serious implications for equity. It implies that those who have higher need receive less of the health care resources, which are assumed to improve health.

Furthermore, the correlation between the under five mortality and per capita expenditure aggregated at the level of health directorate[11] corroborate the above findings of inequity in the distribution of health resources. This is depicted in Table 23.

Table 23
Under five mortality vs. per capita expenditure by Health Directorate

Region	Under five mortality per 1000	Per capita expenditure
North West	71.2	232
North East	54.2	238
Central	45.8	363
South	56.4	252

It can clearly be seen from the above table that the North West health directorate (comprising the regions: Ohangwena, Omusati, Oshana and Oshikoto) which is worse off in terms of under five mortality receives the lowest allocation from the MoHSS. In contrast, the Central health directorate (Erongo, Kunene and Otjozondjupa), with a relatively better of under five mortality figure receives an allocation which is about 60% more than that with the highest rate.

[11] The Health Directorates are in the process of phasing out and they are replaced by 13 Regional Management Teams

By and large, the above discussion indicates that there are no explicit criteria for allocating resource into the different geographical localities. The limited analysis also indicates that there are issues of inequity that need to be addressed in order to achieve the Ministry's health goals and objectives as stipulated in its health policy framework.

However, as discussed previously, it should be noted that the proportion of households with catastrophic health expenditures in Namibia is lower than that of many other countries as out-of-pocket payments constitute a small proportion of total health expenditure.

Despite very low cost recovery ratios from user fees at the national level, it is observed that regions relatively worse off in terms of per capita income, per capita allocations from MoHSS and socio-economic indices recoup the highest proportion of their recurrent expenditure. This information is presented in Table 24 below.

Table 24
Cost recovery ratios

Region*	Per capita income N$	Per capita allocation from MoHSS N$	Cost recovery ratio**
Caprivi	1,598	334	2.0
Erongo	5,423	687	2.2
Hardap	5,945	808	0.9
Karas	6,665	866	1.1
Kavango	1,763	444	2.0
Kunene	2,203	650	1.9
Ohangwena	1,070	317	2.8
Omaheke	3,944	482	16.1
Omusati	1,452	445	2.0
Oshana	1,922	149	1.1
Oshikoto	1,680	722	2.8
Otjozondjupa	3,659	578	4.5
National	3,608		2.0

* Khomas excluded because of missing data

** User fee revenue expressed as a proportion of recurrent expenditure, data from Essential Indicators 2000/01

As indicated in the above table, cost recovery ratio in the country is low by the standards of many African countries. A review of the African experience indicates that most countries recover about 5% of their recurrent expenditure net of administrative costs (Gilson 1997). The regional disparity in cost recovery ratios in Namibia, however, raises a point of concern for equity. The fact that the poorest regions have a higher cost recovery ratio might imply the presence of more stringent waiver/exemption mechanisms. Hence, the under-coverage in the waiver system may result in negative consequences for equity and needs to be looked into carefully.

5.9 MoHSS efficiency of health expenditure

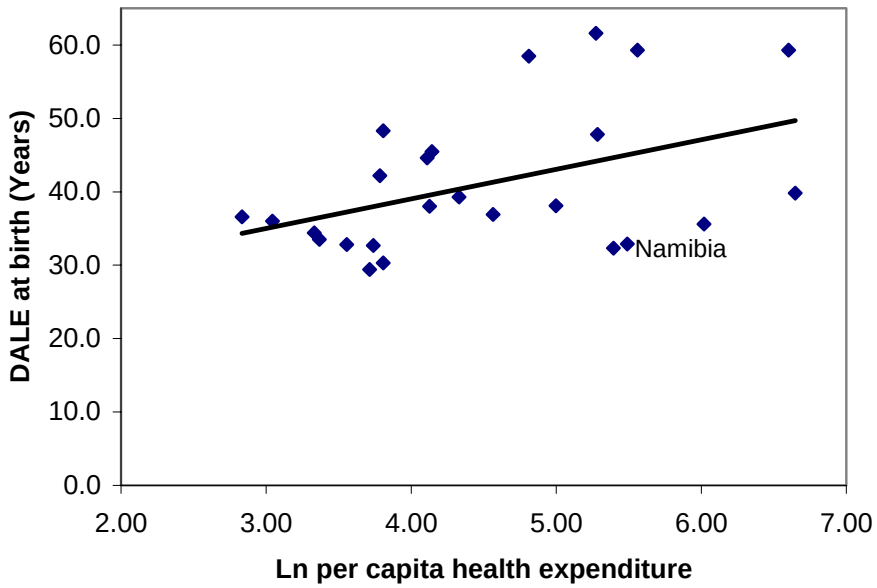
Efficiency and equity are the twin objectives of any social policy including health policy. A health system with compromised efficiency and equity is unlikely to

contribute to the improvement of the health status of the population. It is therefore important to asses the efficiency of health expenditure given the data available.

Efficiency has two forms — technical and allocative. While technical efficiency implies producing at least cost, allocative efficiency refers to whether resources are allocated to those priorities with the greatest impact. In other words, allocative efficiency is about choosing the right mix of services. The discussion that follows will concentrate on technical efficiency, as some of the issues regarding allocative efficiency have been dealt with in some of the foregoing discussion.

In comparing the efficiency of health expenditure with respect to Disability-adjusted Life Expectancy (DALE), use is made of the revised per capita health expenditure figures from WHO (including Namibia) (Musgrove *et al* 2002). This is done for the sake of consistency in the estimation procedures. The figure below depicts the information.

Figure **
Per capita expenditure on health (PPP) vs. DALE



It can be seen from the above figure that Namibia's performance in terms of producing health measured in terms of DALE is way below what it is expected to produce for the level of resources spent. It should, however, be noted that the production of health is a function of a multitude of factors many of which are outside the domain of the health sector. Some of the factors that could explain the discrepancy between health expenditure and DALE in Namibia are the prevalence of high degree of income inequality (Gini co-efficient = 0.7) and poverty and the high prevalence of HIV/AIDS. In fact, the above figure shows that most of the under performing countries are those in the Southern African Development Community (SADC) that are the hardest hit by the HIV/AIDS epidemic.

To asses the efficiency of public spending on health in the regions, the following discussion will present the relationship between per capita allocation on health from the MoHSS and various health outputs such as immunization and antenatal care coverage, use of modern contraception and hospital capacity utilization. Table 25 below presents utilization statistics for selected services.

Table 25
Utilisation of various services by region

Region	Per capita allocation	Immunisation coverage %	Delivery by trained health personnel %	Modern contraception use %
Caprivi	334	54.5	70.8	38.5
Erongo	687	75.2	90.6	66.4
Hardap	808	67.6	89.6	52.8
Karas	866	82.7	95.9	61.5
Kunene	650	49.3	67.6	43.0
Ohangwena	317	60.1	61.1	12.4
Omaheke	482	45.7	57.5	45.9
Omusati	445	58.3	85.6	16.7
Oshikoto	722	68.5	83.3	44.1
Otjozondjupa	578	62.9	73.3	58.5

Source: DHS, MoHSS 2000

Although it is possible to observe some issues regarding performance in the utilization of the given services, not much can be said with respect to the comparative efficiency of each region. Therefore, it is worthwhile to analyze the above data using methods that are easy to use as well as robust frontier techniques (Data Envelopment Analysis). Hence, the table below will depict a crude assessment of efficiency using differences in rank between per capita allocation and each of the above services.

Table 26
Rank differences in per capita allocation and service utilisation

Region	Rank in per capita expenditure	Difference between rank in p.c. expenditure and		
		Immunisation	Delivery	Modern contraception
Caprivi	9	1	2	1
Erongo	4	2	2	3
Hardap	2	-2	-1	-2
Karas	1	0	0	-1
Kunene	5	-4	-3	-2
Ohangwena	10	4	1	0
Omaheke	7	-3	-3	2
Omusati	8	1	4	-1
Oshikoto	3	0	-2	-3
Otjozondjupa	6	1	0	3

As can be observed from the above table the rank difference for Hardap and Kunene regions is consistently negative. A negative value implies that the regions efficiency

in producing the given service is not in line with its resource levels. In other words, it is not efficient in converting inputs to outputs. In contrast Caprivi, Erongo and Ohangwena regions have positive rank differences, which may imply that they are efficient in converting their inputs to outputs. It should also be noted that some of the well performing regions such as Caprivi and Ohangwena are those that get the lowest allocation. On the other under performing regions like Hardap are among the ones receiving the highest allocation.

The above analysis is of a limited scope in analyzing efficiency as it does not give a composite index that can summarize the performance of the region. Hence results of a data envelopment analysis (DEA) model are presented below.

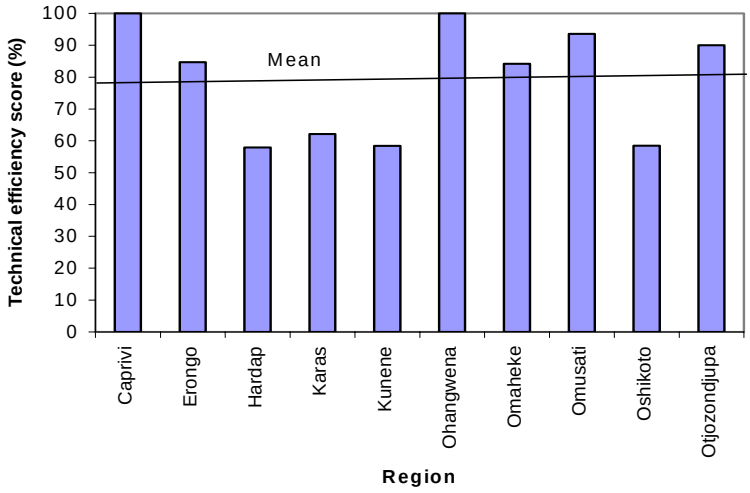
Table 27
Regional technical efficiency and projected per capita allocation

Region	Technical efficiency score (%)	Actual per capita allocation N$	Projected per capita allocation N$
Caprivi	100.0	334	334
Erongo	84.7	687	582
Hardap	57.9	808	467
Karas	62.1	866	546
Kunene	58.4	650	379
Ohangwena	100.0	317	317
Omaheke	84.2	482	405
Omusati	93.6	445	416
Oshikoto	58.5	722	422
Otjozondjupa	90.0	578	520
Mean	79.0		

The above DEA technical efficiency scores reinforce the findings of the comparative analysis from ratio methods (non frontier techniques). Caprivi and Ohangwena regions are the most efficient ones that need to be emulated by the others. The overall technical efficiency score of 79% implies that the regions could have produced the outputs considered in this analysis by per capita allocations which are 21% less. Taking the case of Hardap with a technical efficiency score of 57.9%, the current level of outputs could have been produced by an amount which is less by 42%. In other words, the current levels of output could have been produced for only N$ 467 instead of the current N$ 808 if the region was to be as efficient as its peers i.e. Caprivi.

To compare the regional efficiency scores with the overall mean, Figure 15 is presented below.

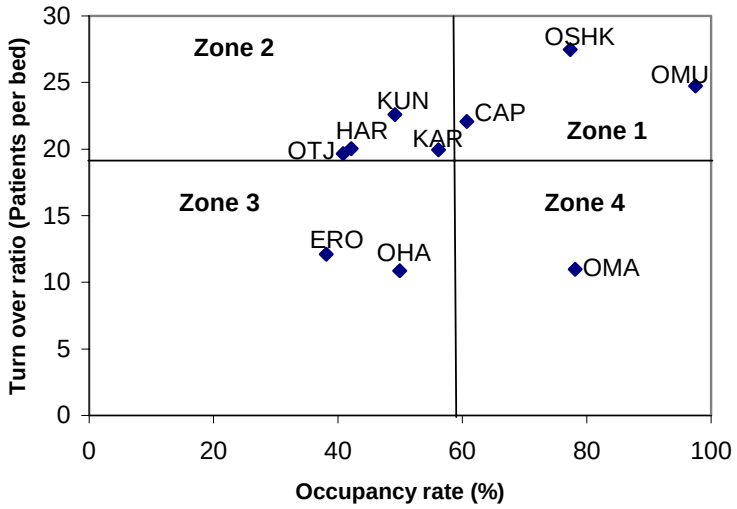
Figure 15
Technical efficiency score



From the above figure it can be observed that four regions are under-performing even when compared to the overall mean technical efficiency level of 79%.

Moreover, for a comprehensive understanding of the picture a comparative analysis of efficiency is done using hospital capacity utilization measures as follows.

Figure 16
Pabon Lasso Diagram - Occupancy rate vs. Turn over ratio



Source: Essential indicators 2000/01

The above figure, which is known as the Pabon Lasso Diagram utilizes multiple measures of hospital capacity utilization to asses the efficiency of hospitals. The plane is divided into four zones by a vertical and horizontal line that cut through the mean values of the occupancy rate and turn over ratio respectively. Hospitals in regions that fall in Zone 1 (high occupancy and high turn over ratio relative to the mean) are said to be more efficient than their peers in the other three zones. It can be seen that Caprivi and Omusati regions that receive allocations that are below the national average of N$ 589 are the ones that are located in the most efficient zone. It is further revealed that most of the regions do not have the desired level of hospital capacity utilization. This merits a detailed analysis of hospital efficiency which is beyond the scope of the current undertaking.

6. CONCLUSION

This analysis has presented the findings of the first National Health Accounts in Namibia. The country's total health expenditure for FY 1998/1999 was estimated at N$ 1,273,115,510 for FY 1999/2000 – N$ 1,440,407,536 and FY 2000/2001 – N$ 1,658,694,285.

The government has been allocating more than 11% of its budget to health services. Although the total health expenditure per capita has been increasing in absolute terms (from N$ 781 to N$ 930), its percentage share in total government budget has been on the decline from 12.6% in 1998/1999 to 11.8% in 2000/2001.

Over the reporting period Government has been the largest source of funding (69.7%, 70.9% and 65.7%). The share of non public funds in the total health expenditure is about 30%. The role of the private sector as well as donor funds have increased remarkably from 27.7% to 30.5% and 2.5% to 3.8% respectively.

The analysis has revealed that total health expenditure as a percentage of GDP stands at 6% for the period under consideration. Namibia's health expenditure as percentage of GDP compares favorably with other countries in the region. Health expenditure per capita is far higher (national average US$ 77) than the minimum amount recommended by the Commission on Macro-economics and Health (US$ 34) to provide a basic package of health care services in low and middle-income countries (WHO 2001 Macroeconomics and Health: Investing in Health for Economic Development. Report of the Commission on Macroeconomics and Health).

The study reveals that the health system is predominantly tax-funded thus ensuring sustainability of services delivery. However, it should also be noted that the system is vulnerable to factors affecting economic performance and the efficiency of tax collection. As out-of-pocket payments constitute a small proportion of total health expenditure, the proportion of households with catastrophic health expenditure in Namibia is lower than that of many other countries.

The major financing agent has been the MoHSS, which accounts for about two thirds of the funds disbursed to the various providers. Private and social insurance also play a significant role as financing agents make up about a quarter of the funds disbursed to providers

The study has shown that hospital expenditure for the reporting period has declined from 45% - 40%, while expenditure on primary health care has increased from 1.9% - 4%. Although this trend is in the right direction more needs to be done. However, expenditures to hospitals may be over-estimated as primary health care activities are also undertaken at these facilities.

There is a high expenditure on personnel costs thus resulting in a non-optimal combination of inputs, which is a necessary condition for efficient service delivery.

There are no clear criteria guiding the geographical distribution of public (MoHSS) resources. The allocation of resources to the various regions of the country is in favour of those whose level of deprivation as measured by such indices as per capita

income, Human Development Index and the rate of stunting is relatively higher. It is assumed that regions that have lower per capita income and human development index and higher levels of stunting have greater need for healthcare and, therefore, need more resources. However, contrary to this assumption, per capita expenditure levels on health by the MoHSS are lower in those that presumably have greater need. This is the phenomenon known as the *inverse care law*.

7. RECOMMENDATIONS AND THE WAY FORWARD

7.1 Despite the tremendous strides made after independence to increase access to health care resources, significant inequities still exist. A plausible explanation could be that the allocation of resources might be following the supply of health services which has a historical basis – where there was a concentration of facilities in those that were more advantaged. The *status quo* thus cannot be changed with a form of budgeting/resource allocation that is of the historical incrementalist type.

It is important therefore that the MoHSS should start to break the historical conditions gradually and allocate its resources according to the need for healthcare. To this end, the development of needs-based resource allocation formula is important. However, this requires the presence of reliable and timely health information, which at present is lacking. Furthermore, for needs-based resource allocation formula to be helpful, disaggregated information has to be available at micro-geographic (small) area level, as allocation at the level of a region may not necessarily take into account intra-region differentials in deprivation. This should, however, not be a cause for inaction.

To reverse the situation gradually and without compromising efficiency, interim measures are needed. One of these is equalization of per capita regional allocation over a period of time. Increases in MoHSS resources (both from the MoF and other sources such as donors) may be allocated to those falling short of their counterpart regions, keeping the budget of those that are receiving higher amounts fixed except for small adjustments for increases in the cost of living. This can go a long way in making the long-term transition to allocation according to needs easier.

7.2 Although the MoHSS budget allocation has been increasing over the years, the rate of increase in allocation to health programmes has not been high relative to that of social welfare. It is therefore imperative that the available resource for health programmes be utilized efficiently as well as soliciting additional funds.

7.3 It has been difficult to obtain the financial information in order to accurately determine the use of funds within the health system. The current health information system generates predominantly epidemiological data. Hence, a comprehensive health management information system needs to be established. In addition to information on diseases and outputs, this should also incorporate data on finance, human resources and transport among others.

NHA is an essential tool for evaluating on-going health reform strategies. The MoHSS is responsible for health policy, strategy and program formulation (stewardship function) in Namibia and as such continuous information from all stakeholders on health financing will be required. There is a need for the MoHSS to establish and maintain a coordination mechanism with all stakeholders on institutionalization of the NHA.

7.4 The institutionalization of NHA faces formidable challenges and among these are:

- **Different data reporting formats**

  The current reporting of financial information among all the stakeholders in the health sector does not conform to the needs of NHA framework. For example, health insurance reported a lump sum and it's difficult to breakdown the amounts used for hospitalization, practitioners and to medical goods dispensed to out-patients. The use of different financial years also poses some problems. Hence to have a relatively good estimates of health expenditure as ofen as possible, there is a need for developing suitable standardized reporting formats.

- **Inadequate capacity**

  The MoHSS has limited technical capacity in undertaking such an important task to generate the needed information for policy and planning. To institutionalize this activity, it is therefore essential to build capacity of the existing staff both through short- and long-term training.

7.5 The Social Security Commission and the Government medical aid scheme are involved in social health insurance component. Hence, the issue of having a unified social health insurance needs to be explored in order to avoid duplication.

GLOSSARY

- **Ancillary services to medical care**

Refers to clinical laboratory, diagnostic imaging and patient transport and emergency rescue.

- **Curative and rehabilitative function**

Refers to all expenditures made on health facilities whose major activities are assumed to be curative and ambulatory.

- **Currencies**

Donors have provided their health expenditures in different currencies. They include the following: US Dollar, British pound, German Mark, Finish Markka and French Frank these currencies were converted to the Namibian Dollar using appropriate exchange rate from the Bank of Namibia.

- **General health expenditure**

It is total health expenditure plus health related functions which include education and training of health personnel, research and development in health, food, hygiene and drinking water control, environmental health and expenditure not specified by kind.

- **Health Expenditure**

Health expenditure is defined as all expenditures or outlays incurred for the provision of health services and promotion of health care programs by public and private sectors for the specific and predominant objective of improving health conditions of individuals, groups or the population as a whole during a defined period of time.

- **Inputs**

Includes specific types of items used to provide services, such as labour, drugs and pharmaceuticals and medical equipments.

- **Sources**

They are entities that provide health funds. They answer the question where does the money come from? Examples include Ministry of Finance, households and donors.

- **Time Boundary**

National Health Accounts uses the accrual method to define its time boundary; that is, expenditures are recorded for the time period in which the activity takes place and not when the actual payment is made. For example, if a hospital stay occurs during the final month of the fiscal year 2002 but payment is made in fiscal year 2003, the expenditure is recorded for fiscal year 2002.

- **Time Period**

The period of the study covers the 1998/19999, 1999/2000 and 2000/2001 financial years. The government financial year runs from 1st March to 31 April.

- **Total health expenditure**

The sum of expenditure that includes spending for personal health care, spending for collective health services and for the operation of the system's financing agents and capital formation (the sum of H.C.1 to H.C.7 and HC.R.1 in international classification for health accounts)

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Annex 1: Namibia NHA - Sources of funds for health care and related functions by financing agent, 1999/2000

Financing Sources x Financing Agents (S x FA)

	S.1 Public Funds*		S.2 Private Funds*				S.3	Column totals
	Total	S.1.1.1 Min.of Finance	S.1.2 Municipal gvt. revenue	S.2.1 Employer funds	S.2.2 Household funds	S.2.4 Other private funds	Rest of the world funds (donors)	
HF.1.1.1 Central government:								
HF.1.1.1.1 Ministry of Health & Social Services		1,247,409,274					33,552,649	1,280,961,923
HF.1.1.1.2 Ministry of Basic Education		188,705						188,705
HF.1.1.1.3 Ministry of Labour		1,635,517						1,635,517
HF.1.1.1.4 Ministry of Defence		3,901,277						3,901,277
HF1.1.1.5 Ministry of Prisons and Correctional Services		3,814,071						3,814,071
HF.1.1.1.7 Ministry of Home Affairs		17,534						17,534
HF.1.1.1.8 Ministry of Foreign Affairs		270,000						270,000
HF.1.1.1.9 Ministry of Agriculture		18,345,639						18,345,639
HF.1.1.1.10 Ministry of Fisheries & marine Resources		359,081						359,081
HF.1.1.3 Municipal government			6,737,350					6,737,350
HF.1.2 Social security funds		5,278,648		7,209,861	386,243	***		12,874,751
HF.2.1 Private social insurance (Govt.employees)		190,304,093				***		190,304,093
HF.2.2 Private insurance				85,632,382	11,269,501	0		96,901,883
H.2.3 Households Out-Pocket					81,730,499			81,730,499
HF.2.4 NGOs							3,823,461	3,823,461
HF.2.5. Firms & Corporations				14,625,491				14,625,491
HF.3 Rest of the world (donors)							1,438,451	1,438,451
TOTAL		1,471,523,839	6,737,350	107,467,734	93,386,243		38,814,561	1,717,929,726

Annex 2: Namibia NHA - Allocation to health care payers/ purchasers 1999/2000
Financing Agents x Providers (FA x P)

	HF.1 General Government				HF.2 Private Sector					HF.3	Row totals and total expenditure measures
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5		
	HF.1.1.1.1 MOHSS	HF1.1.1.1.2 Other Min.	HF.1.1.3 Municipal gvt.	Social security commission	Private social insurance	Private insurance enterprises	Household's out-of-pocket payment	NGOs serving households	Private firms and corporations	Rest of the world	
HP.1 Hospitals	661,627,530	1,639,200		31,750	29,060,819	60,741,357	24,519,150				777,619,806
HP.3 Providers of ambulatory health care	125,455,506	1,269,954			72,652,047	9,992,108	40,865,250	32,000			250,266,865
HP.4 Retail sale and other providers of medical goods	23,262,000				43,591,228	17,354,673	16,346,100	11,679			100,565,680
HP.5 Provision and administration of public health programs	26,753,514	20,391,252	376,105					1,540,384			49,061,255
HP.6 General health administration and insurance	94,874,473		4,502,577	12,843,001	45,000,000	8,813,745		377,667			166,411,463
HP.7 All other industries									14,625,491		14,625,491
HP.8 Institutions providing health related services *	96,975,900	3,519,842	1,215,738								101,711,480
HP.9 Rest of the world										1,438,451	1,438,451
Not elsewhere specified	252,013,000	1,711,576	642,930					1,861,731			256,229,237
Column totals	**1,280,961,923**	**28,531,824**	**6,737,350**	**12,874,751**	**190,304,094**	**96,901,883**	**81,730,500**	**3,823,461**	**14,625,491**	**1,438,451**	**1,717,929,728**

Annex 3: Namibia NHA - Allocation across health care functions by payers/purchasers 1999/2000

Financing Agents x Functions (FA x F)

	HF.1 General Government				HF.2 Private Sector					HF.3	Row totals and total expenditure measures **
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5		
	HF.1.1.1.1 MOHSS	HF1.1.1.2 Other Min.	HF.1.1.3 Municipal gvt	Social security funds	Private social insurance	Private insurance	Households' OOPS	NGOs	Private firms & Corporations	Rest of the world	
HC.1 and HC.2 Services of curative care and rehabilitative care	787,083,036	2,909,154		31,750	101,712,866	70,733,465	65,384,400	32,000	14,625,491		1,042,512,162
HC.4 Ancillary services to medical care	23,262,000										23,262,000
HC.5 Medical goods dispensed to out-patients					43,591,228	17,354,673	16,346,100	11,679			77,303,680
HC.6 Prevention and public health services	26,753,514	3,978,547	365,700					893,913		1,438,451	33,430,125
HC.7 Health administration and health insurance	94,640,098		4,502,577	12,843,001	45,000,000	8,813,745		377,667			166,177,088
Subtotal: TCHE	**931,738,648**	**6,887,701**	**4,868,277**	**12,874,751**	**190,304,094**	**96,901,883**	**81,730,500**	**1,315,259**	**14,625,491**	**1,438,451**	**1,342,685,055**
Plus: HCR.1 Capital formation of health care provider institutions	96,975,900	9,277	737,304								97,722,481
Equals: THE	**1,028,714,548**	**6,896,978**	**5,605,581**	**12,874,751**	**190,304,094**	**96,901,883**	**81,730,500**	**1,315,259**	**14,625,491**	**1,438,451**	**1,440,407,536**
Plus: HCR.2 Education and training of health personnel	156,250	1,118,096	10,405								1,284,751
HCR.3 Research and development in health	78,125							25,894			104,019
HCR.4 Food, hygiene and drinking water control		18,744,451	478,434								19,222,885
HCR.5 Environmental health		70,000						620,577			690,577
Other functions not specified elsewhere	252,013,000	1,702,299	642,930					1,861,731			256,219,960
Equals:GEH	**1,280,961,923**	**28,531,824**	**6,737,350**	**12,874,751**	**190,304,094**	**96,901,883**	**81,730,500**	**3,823,461**	**14,625,491**	**1,438,451**	**1,717,929,728**

Annex 4: Namibia NHA - Financial allocations to different types of inputs, 1999/2000

Financing Agents x Inputs (FA x I)

	HF.1 General Government				HF.2 Private Sector					HF.3
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5	
	HF.1.1.1.1 MOHSS	HF.1.1.1.2 Other Min	HF.1.1.3 Municipal gvt	Social security funds	Private social insurance	Private insurance enterprises	Private households' out-of-pocket payment	NGOs serving households	Private firms and corporations	Rest of the world
I.1 Compensation of employees	608,790,327	5,823,187								
I.1.1 Wages	555,016,262									
I.1.2 Social contributions	53,774,065									
I.2 Use of goods and services	242,155,623	22,699,360								
I.2.1 Material supplies	19,452,233	419,361								
I.2.1.1 Drugs and pharmaceuticals	77,808,934	645,153								
I.2.1.2 Other supplies										
I.2.2 Services	144,894,456	21,634,846								
I.3 Consumption of fixed capital										
I.4 Interest										
I.5 Other expenditure on inputs	2,770,653									
I.5.1 Other current expenditure	2,770,653									
I.5.2 Other capital expenditure	96,975,900	9,277								
I.5.2.1 Buildings	86,536,994									
I.5.2.2 Capital equipment	509,640									
I.5.2.3 Vehicles	1,129,278									
I.5.2.4 Not elsewhere satisfied	8,799,988	9,277								
I.6 Grants	78,256,420									
I.7 Social benefits	252,013,000									
Total expenditure	**1,280,961,923**	**28,531,824**								

Annex 5: Namibia NHA - Sources of funds for health care and related functions by financing agent, 2000/01

Financing Sources x Financing Agents (S x FA)

	S.1 Public Funds*		S.2 Private Funds*				S.3	Column totals
	Total	S.1.1.1 Min.of Finance	S.1.2 Municipal gvt. revenue	S.2.1 Employer funds	S.2.2 Household funds	S.2.4 Other private funds	Rest of the world funds (donors)	
HF.1.1.1 Central government:								
HF.1.1.1.1 Ministry of Health & Social Services		1,367,524,043					53,291,145	1,420,815,188
HF.1.1.1.2 Ministry of Basic Education		1,953,705						1,953,705
HF.1.1.1.3 Ministry of Labour		1,947,597						1,947,597
HF.1.1.1.4 Ministry of Defence		4,704,833						4,704,833
HF1.1.1.5 Ministry of Prisons and Correctional Services		4,261,942						4,261,942
HF.1.1.1.7 Ministry of Home Affairs		19,702						19,702
HF.1.1.1.8 Ministry of Foreign Affairs		490,000						490,000
HF.1.1.1.9 Ministry of Agriculture		26,049,868						26,049,868
HF.1.1.1.10 Ministry of Fisheries & Marine Resources		388,453						388,453
HF.1.1.1.11 Ministry of Works		89,000						89,000
HF.1.1.3 Municipal government			7,479,250					7,479,250
HF.1.2 Social security funds		8,484,703		11,588,862	620,832			20,694,397
HF.2.1 Private social insurance (Govt.employees)		252,898,028						252,898,028
HF.2.2 Private insurance				130,201,696	13,429,271	1,705,795		145,336,762
H.2.3 Households Out-Pocket					93,570,729			93,570,729
HF.2.4 NGOs							14,208,446	14,208,446
HF.2.5. Firms & Corporations				14,565,885				14,565,885
HF.3 Rest of the world (donors)							361,084	361,084
TOTAL		1,668,811,874	7,479,250	156,356,443	107,620,832	1,705,795	67,860,675	2,009,834,869

Annex 6: Namibia NHA - Allocation to health care payers/purchasers 2000/01

Financing Agents x Providers (FA x P)

	HF.1 General Government				HF.2 Private Sector					HF.3	Row totals and total expenditure measures
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5		
	HF.1.1.1.1 MOHSS	HF1.1.1.1.2 Other Min.	HF.1.1.3 Municipal gvt.	Social security commission	Private social insurance	Private insurance enterprises	Household's out-of-pocket payment	NGOs serving households	Private firms and corporations	Rest of the world	
HP.1 Hospitals	638,214,880	1,424,400		3,246,819	41,579,606	95,103,152	28,071,219				807,640,075
HP.3 Providers of ambulatory health care	153,003,840	1,392,862			103,949,014	13,586,165	46,785,365	55,944			318,773,189
HP.4 Retail sale and other providers of medical goods	29,285,000				62,369,408	27,172,329	18,714,146	16,056			137,556,939
HP.5 Provision and administration of public health programs	46,435,498	26,542,878	515,732					8,926,974			82,421,082
HP.6 General health administration and insurance	110,911,280		4,785,283	17,447,578	45,000,000	9,475,117					187,619,258
HP.7 All other industries									14,565,885		14,565,885
HP.8 Institutions providing health related services *	130,710,690	4,159,628	1,403,828					34,000			136,308,146
HP.9 Rest of the world										361,084	361,084
Not elsewhere specified	312,254,000	6,385,332	774,407					5,175,472			324,589,211
Column totals	**1,420,815,188**	**39,905,100**	**7,479,250**	**20,694,397**	**252,898,028**	**145,336,762**	**93,570,729**	**14,208,446**	**14,565,885**	**361,084**	**2,009,834,869**

Annex 7: Namibia NHA - Allocation across health care functions by payers/purchasers 2000/01

Financing Agents x Functions (FA x F)

	HF.1 General Government				HF.2 Private Sector					HF.3	Row totals and total expenditure measures **
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5		
	HF.1.1.1.1 MOHSS	HF1.1.1.2 Other Min.	HF.1.1.3 Municipal gvt	Social security funds	Private social insurance	Private insurance	Households' OOPS	NGOs	Private firms & Corporations	Rest of the world	
HC.1 and HC.2 Services of curative care and rehabilitative care	791,218,720	2,817,262		3,246,819	145,528,620	108,689,316	74,856,583	55,944	14,565,885		1,140,979,149
HC.4 Ancillary services to medical care	29,285,000										29,285,000
HC.5 Medical goods dispensed to out-patients					62,369,408	27,172,329	18,714,146	16,056			108,271,939
HC.6 Prevention and public health services	46,435,498	4,811,405	491,952					8,926,974		361,084	61,026,913
HC.7 Health administration and health insurance	110,676,905		4,785,283	17,447,578	45,000,000	9,475,117					187,384,883
Subtotal: TCHE	**977,616,123**	**7,628,667**	**5,277,235**	**20,694,397**	**252,898,028**	**145,336,762**	**93,570,729**	**8,998,974**	**14,565,885**	**361,084**	**1,526,947,884**
Plus: HCR.1 Capital formation of health care provider institutions	130,710,690	170,833	864,878								131,746,401
Equals: THE	**1,108,326,813**	**7,799,500**	**6,142,113**	**20,694,397**	**252,898,028**	**145,336,762**	**93,570,729**	**8,998,974**	**14,565,885**	**361,084**	**1,658,694,285**
Plus: HCR.2 Education and training of health personnel	156,250	1,388,376	23,780					13,247			1,581,653
HCR.3 Research and development in health	78,125							20,753			98,878
HCR.4 Food, hygiene and drinking water control		24,241,892	538,950								24,780,842
HCR.5 Environmental health		90,000									90,000
Other functions not specified elsewhere	312,254,000	6,385,332	774,407					5,175,472			324,589,211
Equals: GHE	**1,420,815,188**	**39,905,100**	**7,479,250**	**20,694,397**	**252,898,028**	**145,336,762**	**93,570,729**	**14,208,446**	**14,565,885**	**361,084**	**2,009,834,869**

Annex 8: Namibia NHA - Financial allocations to different types of inputs, 2000/01

Financing Agents x Inputs (FA x I)

	HF.1 General Government				HF.2 Private Sector					HF.3
	HF.1.1 General government excluding social security funds			HF.1.2	HF.2.1	HF.2.2	HF.2.3	HF.2.4	HF.2.5	
	HF.1.1.1	HF.1.1.2	HF.1.1.3							
	MOHSS	Other Min	Municipal gvt	Social security funds	Private social insurance	Private insurance enterprises	Private households' out-of-pocket payment	NGOs serving households	Private firms and corporations	Rest of the world
I.1 Compensation of employees	568,438,359	6,500,140								
I.1.1 Wages	517,911,210									
I.1.2 Social contributions	50,527,149									
I.2 Use of goods and services	320,505,141	33,234,127								
I.2.1 Material supplies	23,899,170	479,520								
I.2.1.1 Drugs and pharmaceuticals	95,596,679	819,840								
I.2.1.2 Other supplies										
I.2.2 Services	201,009,292	31,934,767								
I.3 Consumption of fixed capital										
I.4 Interest										
I.5 Other expenditure on inputs	6,590,805									
I.5.1 Other current expenditure	6,590,805									
I.5.2 Other capital expenditure	130,710,690	170,833								
I.5.2.1 Buildings	101,083,269									
I.5.2.2 Capital equipment	4,517,121									
I.5.2.3 Vehicles	5,352,622	155,000								
I.5.2.4 Not elsewhere satisfied	19,757,678	15,833								
I.6 Grants	82,316,193									
I.7 Social benefits	312,254,000									
Total expenditure	**1,420,815,188**	**39,905,100**								