

HFS Technical Note No. 19

MOZAMBIQUE PUBLIC SECTOR  
BUDGETARY RESOURCE NEEDS AND  
ALLOCATIONS IN HEALTH

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## ABSTRACT

This document details a technical assistance effort in Mozambique with the objective of establishing a health budget and allocation process. The HFS Project worked with the Ministry of Health (MOH) and USAID/Maputo's Office of Health to outline processes for correcting health financing problems. Based on this effort, this paper details expenditures on health by the Government of Mozambique (GOM) and donors, current MOH budgeting and planning procedures, and existing financial information systems.

In a recently completed post-war plan analyzing Mozambique's health financing situation, it was found that, compared to other sub-Saharan African countries, Mozambique had relatively low per capita spending on health; a relatively small percentage of GOM spending; and a high percentage of spending from donors. Funds are unevenly allocated to health facilities, with about 60 percent of combined donor and GOM capital directed to high-level facilities, such as central hospitals, while lower level facilities, such as rural hospitals, receive about 40 percent. In addition, some provinces are economically favored.

MOH budgeting is plagued by related activities that run independent of each other. Resources for health programs are not defined, and health expenditure programs are not properly monitored or evaluated. Budgeting is not conducted by the same sources that develop health programs.

To correct these imbalances, the MOH has created a plan that will gradually lessen dependence on external donors and re-allocate existing resources to develop primary and secondary care services. In addition this report recommends installation of a financial management information system and training of MOH personnel in accounting and financial management systems.

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## LIST OF ACRONYMS

CNP	Comissão Nacional do Plano National Planning Commission (NPC)
CSP	Cuidados de Saúde Primários Primary Health Care (PHC)
DAF	Direcção de Administração e Finanças Administration and Finance Directorate (AFD)
DDS	Direcção Distrital de Saúde District Health Directorate (DHD)
DN	Direcções Nacionais National Directorates (ND)
DNPC	Direcção Nacional de Planificação e Cooperação National Directorate of Planning and Cooperation (NDPC)
DPF	Direcção Provincial de Finanças Provincial Finance Directorate (PFD)
DPS	Direcção Provincial de Saúde Provincial Health Directorate (PHD)
DSA	Doente saído ajustado Weighted Cost per Patient Discharge (WCPD)
DSCM	Direcção de Serviços da Cidade de Maputo Maputo City Services Directorate (MCS D)
DTS	Doenças de Transmissão Sexual Sexually Transmitted Diseases (STD)
EPI	Expanded Program on Immunization
FIS	Financial Information System
GACOPI	National Planning and Cooperation Directorate
GM	Governo de Moçambique Government of Mozambique (GOM)
HCB	Hospital Central da Beira Beira Central Hospital (BCH)
HCM	Hospital Central de Maputo Maputo Central Hospital (MCH)
HCN	Hospital Central de Nampula Nampula Central Hospital (NCH)

<b>HPQ</b>	Hospital Provincial de Quelimane Quelimane Provincial Hospital (QPH)
<b>ICS</b>	Instituto de Ciências de Saúde Health Sciences Institute (HSI)
<b>IRA</b>	Infecções Respiratórias Agudas Acute Respiratory Infections (ARI)
<b>MINFIN</b>	Ministério das Finanças Ministry of Finance (MOF)
<b>MISAU</b>	Ministério da Saúde Ministry of Health (MOH)
<b>MT</b>	Meticais (MT) (Mozambican Currency)
<b>OGE</b>	Orçamento Geral do Estado National Budget
<b>OMS</b>	Organização Mundial de Saúde World Health Organization (WHO)
<b>PAV</b>	Programa Alargado de Vacinações Expanded Program on Immunizations (EPI)
<b>PNUD</b>	Programa das Nações Unidas para o Desenvolvimento United Nations Development Program (UNDP)
<b>PRAAPNS</b>	Projecto de Revisão de Alguns Aspectos da Política Nacional de Saúde Project to Review Some Aspects of National Health Policy
<b>PTIP</b>	Triennial Public Investment Program
<b>RAF</b>	Repartição de Administração e Finanças Administration and Finance Section (provincial level)
<b>SAF</b>	Sector de Administração e Finanças Administration and Finance Sector (district level)
<b>SIDA</b>	Síndrome de imunodeficiência adquirida Acquired Immune-Deficiency Syndrome (AIDS)
<b>SIF</b>	Sistema de informação financeira Financial Information System (FIS)
<b>SMI</b>	Saúde Materno-Infantil Maternal and Child Health (MCH)
<b>SNS</b>	Sistema Nacional de Saúde National Health System (NHS)

**STATS**      Informação Estatística Anual - 1990  
Annual Health Statistics - 1990

**UNICEF**      Fundo das Nações Unidas para a Infância  
United Nations Children's Fund

## EXECUTIVE SUMMARY

This report is the product of the second of three policy studies commissioned by USAID Maputo. The first was an analysis of private health care in Mozambique and the ways in which the Government of Mozambique (GOM) could encourage its growth. The second study, which is the focus of this report, examined GOM and donor budget allocations for health. A third study, which has not yet been conducted, will concentrate on the pharmaceutical supply and distribution system.

This study was conducted between October 19 and November 13, 1992. USAID and the Ministry of Health (MOH) requested the consultants broaden the scope of the study to include the budgeting and planning process from district, provincial, and central levels, and the financial information system (FIS) for health. Budget allocations are discussed in Chapter 1; Chapter 2 discusses the MOH budgeting and planning process; while Chapter 3 is devoted to FISs. The study's conclusions and recommendations are discussed in Chapter 4.

The MOH in Mozambique has recently completed a post-war plan for the rehabilitation of the health system. The plan, which served as an important reference for this study, analyzes the current health financing situation in Mozambique. In 1990, the recurrent health expenditure was 49.5 million contos,<sup>1</sup> of which 38 percent was financed by the GOM and 62 percent by donors. Salaries account for 43 percent of recurrent expenditures, drugs for 34 percent, and "other" for 23 percent. For GOM recurrent expenditures alone, approximately 54 percent of expenditures are for salaries.

The 1990 investment budget was 9.6 million contos, of which 20 percent was government-financed and 80 percent donor-financed. Total (recurrent and investment) expenditures on health were 59.1 million contos in 1990, which, in per-capita terms, is 3,745 Meticais (MT) or \$4.03 US. GOM spending on health was equal to 4.4 percent its total spending.

Compared to other sub-Saharan African countries, Mozambique has a relatively low per capita spending on health, a relatively small percentage of spending coming from the GOM, and a high percentage of spending from donors.

Higher level facilities, such as provincial and central hospitals, receive roughly 60 percent of combined donor and GOM recurrent health spending, while lower level facilities, such as health posts, centers, and rural hospitals, receive 40 percent of health spending. Expenditures per bed-day are more nearly equal across levels of the health system, and personnel, with the exception of doctors, are also not so highly concentrated in higher level facilities.

There are substantial disparities in the per capita allocation of resources to urban and rural areas. Urban per capita recurrent expenditure is 12,300 MT

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<sup>1</sup> One "conto" is the equivalent of 1000 Meticais, the Mozambican unit of currency. In 1990, the year selected in this report for much of the budget allocation discussion, \$1.00 U.S. was equal to 929 Meticais.

(\$6.90 US), compared to 1,600 (\$0.90) for rural areas.<sup>2</sup> Health personnel are also much more heavily concentrated in urban areas than in rural areas. For example, on a per-capita basis, there is one preventive health worker for 14,000 urban dwellers, while the ratio is one to 59,000 for rural populations.

The process of programming health expenditures is performed independently of planning for supplies and materials. The planning process does not define the necessary nor available resources for management of health programs; neither are indicators provided that would permit the monitoring and evaluation of program execution. In addition, the budgeting of expenditures is not performed by the same MOH entities that develop health programs, and GOM health budgets do not encompass all the resources which will be made available to the health sector. Expenditures financed by the national budget and cost recovery receipts are planned only as far as the provincial level. Budgeting at the provincial level is based upon what was budgeted and expended the previous year, rather than planned activities and their estimated costs.

Improved financial management and financial information are among the top priorities of the Mozambican National Health System (NHS). This is demonstrated by concerns expressed by MOH officials and reported in donor agency documents. The sustainability of growth in health services provision depends on efforts to strengthen management.

In general, good financial information for the health system is lacking. Among the problems are lack of reliability and completeness, widely dispersed sources of data, and outdated information. About two-thirds of the health system's financial resources are provided by donor agencies. For the most part, these resources are not directly controlled by MOH bodies. This situation often leads to inefficiencies in resource utilization. When a matrix is created which shows provision and financing of health services on one axis and public and private entities on the other axis, one sees that the provision of services is principally public, while financing is mixed, public and private (if donations are considered private resources).

For Maputo, available data indicate that private family expenditures on health are equivalent to 58 percent of GOM health expenditures, which suggests that a substantial portion of the population in urban areas is willing to pay somewhat more to obtain better quality health services. Information about the amount of cost recovery revenue from user fees is incomplete. Available data indicate that non-adjustment of prices since 1987 has led to a drop in revenue. In 1991, the normal public sector user fees (cobranças normais) represented only 10 percent of total cost recovery revenue. Drug fees represented 33 percent, and the special clinics generated the remaining 57 percent.

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<sup>2</sup> Using the 1990 official exchange rate (from November 1990) of 1783 MT per \$1.00 US.

There are various projects and programs, either ongoing or in the preparation stage, to strengthen the management and provision of financial information for the health system. The most noteworthy are the following:

- National Health System Management Project (supported by the World Bank and UNICEF);
- Pilot Project for Integrated Budgeting and Management of MOH and Donor Funds (supported by the Swiss Cooperation and UNICEF);
- Management Support for Health Project (supported by UNICEF);
- Management Training Project (supported by UNDP), and
- Health and Nutrition Project (supported by the World Bank).

Conclusions and recommendations of the study are summarized in the following text:

1. Various imbalances exist in the distribution of health resources in Mozambique. As in many countries, resources are unevenly distributed between urban and rural areas; tertiary/secondary health facilities and primary care facilities; and economically favored provinces, compared to provinces that are underserved.
2. The MOH has drawn up a plan to improve the health system, emphasizing primary and secondary health care structures. This effort should be supported by donors.
3. The level of Mozambique's dependency on donors for the operation of its health system is cause for concern. Measures should be taken, as the MOH itself suggests, to reduce the percentage of health costs financed by donors. Options to consider include revision of fee schedules and charging in-patients for some of the drugs consumed during hospitalization.
4. A comparative analysis of per capita health services and spending among provinces should be undertaken. Provincial budgets should be developed in order to redistribute resources so that provinces with the fewest health services (e.g., institutional births) receive a proportionally larger budget.
5. In the short term, the Directorate of Finance and Administration (DAF) FIS can be strengthened by designating a staff member to collect, analyze, and disseminate financial information.
6. The methodology for calculating costs of health services should be revised to produce timely, and therefore useful, information.
7. Coordination between donors and the MOH should be strengthened and FISs of both parties should be made clear to each other. MOH should systematically register all donations it receives in its accounting and budgeting processes. The method by which donations-in-kind are assigned monetary value by the MOH Supply Directorate should be revised and then adopted at the DPS and DDS levels.

8. Greater balance in the application of external funds should be encouraged. For example, in 1991, the AIDS program had a budget six times the size of the malaria program and 3.7 times the size of the program for tuberculosis, certainly far from responding to the concrete needs of the Mozambican population, but clearly reflecting the priorities established by donors.
9. Coordination between planning and budgeting processes at all levels can be improved, with the objective of planning activities which can be carried out with available resources.
10. The efforts at program budgeting should be encouraged. Such efforts should be coordinated with the process of allocating funds to the provinces and creating a matrix that coordinates vertical budgeting (by activity programs) with horizontal budgeting (by the body responsible for executing the budget).
11. In the medium term, a FIS should be installed, compatible with the present Health Information System, to guarantee production of coherent and integrated information.
12. The introduction of general accounting (double-entry bookkeeping) in the NHS will permit improved management, especially in standardizing the application of accounting rules and producing financial information.
13. Once the specific human resource training needs in management and administration have been identified, the planned training and re-training activities should follow rapidly. Donors should give study grants to train top-level professionals.

## 1.0 BUDGETARY RESOURCE NEEDS AND ALLOCATIONS IN HEALTH

### 1.1. HEALTH BUDGET AND ALLOCATION

The MOH has recently completed a post-war plan for the rehabilitation of the health system. The plan is contained in a report entitled "O Sector Publico de Saude em Moçambique: Uma Estrategia Pos-Guerra de Reabilitação e de Desenvolvimento Sustentado"<sup>3</sup> (hereafter referred to as "PRAAPNS" or "Razak and Segall, 1992"), by Abdul Razak Noormahomed and Malcolm Segall. The first two sections of PRAAPNS, which contain a detailed analysis of the financial resources available to the health sector, both from the GOM budget and from donors, provided important information for this report.

In most cases, discussion will focus on the health budget for 1990, because the data for this year are more complete than those for 1991 or 1992.

#### 1.1.1. Total Recurrent Expenditures

In 1990, total recurrent expenditures for health were 49.5 billion MT.<sup>4</sup> Exhibit 1-1 shows that approximately 43 percent of recurrent expenditures are for salaries, 34 percent for drugs, and 23 percent for other operating costs. For GOM expenditures alone, the percent of recurrent costs allocated to salaries was about 54 percent in 1990, and is estimated at 57 percent for 1991. Rising GOM allocations to salaries mean fewer supplies and equipment for health personnel to use in treating patients. Shortages of basic supplies, drugs, and equipment already seriously limit the effectiveness of the health system.

Exhibit 1-1  
Health System Recurrent Costs Covered by Government and Donors  
(Million MT, 1990)

	SALARIES	DRUGS	OTHER	TOTAL
AMOUNT	21,286	16,831	11,386	49,503
PERCENT	43	34	23	100

Sources: Razak and Segall, 1992, Tables 9A, 9B, 10

Exhibit 1-2 shows recurrent expenditures by fund source. The GOM spends approximately 38 percent, compared to donors' 62 percent. This is a reversal of the situation which existed in 1986 when donors supplied 29 percent and the GOM 71 percent. Recurrent expenditures in per capita terms are 3,134 MT or \$3.37 US.

<sup>3</sup> Translation: "The Public Health Sector in Mozambique: A Post-War Strategy for Rehabilitation and Sustainable Development."

<sup>4</sup> 1990 exchange rate of 929 Mozambican meticals to the U.S. dollar.

**EXHIBIT 1-2**  
**Recurrent Expenditures for Health, Government, and Donors (1990)**

SOURCE OF FUNDS	Meticais		U.S. Dollars	
	Total (000,000)	Per Capita	Total (000)	Per Capita
GOM Budget	18,932 (38%)	1,198	20,379	1.29
Donors	30,571 (62%)	1,936	32,904	2.08
Total	49,503 (100%)	3,134	53,283	3.37

Source: Razak and Segall, 1992, Tables 12 and 16

Notes: (a) 1990 Exchange rate of 929 MT per dollar

(b) Population estimate of 15.79 million (STATS 1990)

**1.1.2. Total Investment Expenditures**

Exhibit 1-3 provides data on investment expenditures. In 1990, total investment expenditures were 9.6 billion MT (\$10.4 million US), of which 20 percent came from the GOM budget and 80 percent from donors. In per-capita terms, investment was 611 MT (\$0.61 US).

**EXHIBIT 1-3**  
**Investment Expenditures for Health, Government, and Donors (1990)**

SOURCE OF FUNDS	Meticais		U.S. Dollars	
	Total (000,000)	Per Capita	Total (000)	Per Capita
GOM Budget	1,939 (20%)	123	2,087	0.13
Donors	7,706 (80%)	488	8,295	0.48
Total	9,645 (100%)	611	10,382	0.61

Source: Razak and Segall, 1992, Tables 12 and 16

Notes: (a) 1990 Exchange rate of 929 MT per dollar

(b) Population estimate of 15.79 million (STATS 1990)

**1.1.3. Investment and Recurrent Expenditures Combined**

Exhibit 1-4 summarizes investment and recurrent expenditures. Total expenditures in the health sector in 1990 were 59.1 billion MT (\$63.7 million US). Of this total, the GOM financed 35 percent, and donors financed the remaining 65 percent. Donor financing, as a percentage of total health financing, has been steadily increasing over the last four years, from 29 percent of the total health budget in 1986, to 65 percent in 1990.

The total per capita health expenditure in 1990 was 3,745 MT (\$4.03 US). Recurrent costs accounted for 84 percent of total expenditures, while investment expenditures represented 16 percent.

**EXHIBIT 1-4**  
**Total Health Expenditures (Recurrent and Investment),  
Government, and Donors (1990)**

SOURCE OF FUNDS	Meticais		U.S. Dollars	
	Total (000,000)	Per Capita	Total (000)	Per Capita
GOM Budget	20,871 (35%)	1,321	22,446	1.42
Donors	38,277 (65%)	2,424	41,202	2.61
Total	59,148 (100%)	3,745	63,668	4.03

Source: Razak and Segall, 1992, Tables 12 and 16

Notes: (a) 1990 Exchange rate of 929 MT per dollar  
(b) Population estimate of 15.79 million (STATS 1990)

GOM health spending has been increasing modestly over the last five years, both in real per-capita terms and as a percent of total GOM spending, as is shown in Exhibit 1-5. Estimated health expenditure as a percent of total GOM expenditures for 1991 was 5.2 percent, which surpasses the five percent level recommended for developing countries.<sup>5</sup>

**EXHIBIT 1-5**  
**Government Health Financing Indicators (1987-1991)**

	1987	1988	1989	1990	1991 <sup>a</sup>
Health Expenditure Per Capita (1980 MT)	149	185	172	196	208
As % of Total Govt. Expenditure	2.8	4.1	3.9	4.4	5.2
As % of GNP	1.0	1.2	1.4	1.3	1.5

Source: Razak and Segall, 1992 Tables 4, 19

Notes: (a) Estimates

<sup>5</sup> World Bank, forthcoming, 1992.

It is interesting to compare Mozambique's health finance statistics with those of other African countries, as in Exhibit 1-6. Mozambican data refer to 1990 and 1986. Of the seven countries listed, Mozambique has both the lowest GDP per capita (\$90 US in 1990) and the lowest health expenditure per capita (\$4.03 US). In the mid-80s, the Mozambican government was one of the least dependent on donor assistance (and private expenditures) for health expenditures, with the GOM covering 71 percent of health expenditures. In the ensuing four years, however, Mozambique has become one of the countries most dependent on non-government sources of health financing, receiving 65 percent of recurrent expenditures from donors.

**EXHIBIT 1-6**  
**Health Financing Indicators for Selected Sub-Saharan**  
**African Countries (1986-1990)**

Country	Year	GDP/Capita (US\$)	Total (US\$) Health Expend/cap.	Percent by Government
<b>MOZAMBIQUE</b>	1990	90	4.03	35
Zimbabwe	1987	710	45.82	62
Kenya	1984	410	10.18	49
Mali	1985	240	3.80	41
Burundi	1986	200	5.26	71
Ethiopia	1986	120	3.80	36
<b>MOZAMBIQUE</b>	1986	93	1.65	71

Source: World Bank Development Report, 1988, and Vogel, 1988, as reported by P. Berman, "Health Financing Update #1", Harvard School of Public Health, 1992; and Exhibit 1-4, in this report.

#### 1.1.4. Allocation of Health Resources By Level of the Health Care System

Following are descriptions of how resources (human, capital, and financial) are distributed by level of the health system, by urban versus rural areas, by province, and by health program.

##### 1.1.4.1. Recurrent Expenditures (Government and Donor)

The Mozambican health system has four different levels of health care facilities. Level I comprises health posts and health centers, Level II consists of rural and general hospitals, Level III represents provincial hospitals, and Level IV includes central and specialized hospitals. This is a typical pyramidal structure, with higher level facilities intended to serve as reference facilities for the immediately lower level facility.

Exhibit 1-7 demonstrates that the Level III & IV facilities<sup>6</sup> (central and specialized hospitals) receive more than half of all recurrent expenditures (60 percent) while Level I facilities receive 27 percent and Level II facilities receive the smallest portion, 13 percent. While this allocation seems to run counter to the stated primary health care (PHC) purpose of the MOH, it favors PHC more than many other developing countries. A sample of 13 selected countries devoted, on average, 30 percent of total recurrent expenditures to primary and preventive care. Mozambique's Level I and II (considered primary and preventive levels) received 40 percent of total recurrent expenditures in 1990.

**EXHIBIT 1-7**  
**Recurrent Health Expenditures Covered by Government and Donors**  
**by Level of Health System (1990)**  
**(000,000 MT)**

	Level I	Level II	Level III & IV	All Levels
Operations	3,023	1,679	6,493	11,195
Salary	4,167	2,708	13,958	20,833
Drugs	6,058	1,965	8,350	16,373
Total	13,248	6,352	28,801	48,401 <sup>a</sup>
Percent	27	13	60	100

Sources: Table 20, Razak and Segall, 1992.

Notes: (a) Differs from total in tables 2.1 and 2.2 because it excludes some MOH administrative salaries.

A comparison of expenditures across levels on the basis of beds or out-patient visits illustrates the uneven distribution of resources (see Exhibit 1-8). Level I facilities have 41 percent of the beds and treat 80 percent of total out-patients, yet receive only 27 percent of recurrent expenditures. In contrast, Level III and IV facilities combined have 40 percent of the beds and only 10 percent of out-patients, but receive 60 percent of expenditures. On a per-bed basis, Level I facilities have expenditures of 2.6 million MT, less than half the 5.8 million MT per bed at Level III and IV facilities.

Expenditure patterns appear less distorted, however, if one looks at bed-days at each level of the health system. Expenditures are roughly proportional to percent of bed-days. For example, Level I facilities have 25 percent of bed-days and receive 27 percent of expenditures. Level III and IV facilities combined have 54 percent of bed-days and receive 60 percent of expenditures.

<sup>6</sup> Due to data limitations, Level III and IV facilities are discussed and analyzed as a single group. This is an acceptable compromise since both levels are hospitals providing tertiary care. The main difference is that Level IV facilities are generally larger and provide more intensive and more specialized care than their provincial counterparts, the Level III facilities.

This proportionality is reflected in the expenditure per bed-day: primary care facilities (Level I) and reference facilities (Levels III and IV) both have expenditures per bed-day of approximately 22,000 MT. Two different conclusions can be drawn from this. The first is that different level facilities are allocated resources roughly in proportion to their outputs (e.g., bed-days). Alternatively, levels may be receiving unequal allocations of resources, which results in fewer outputs for those levels receiving fewer resources.

**EXHIBIT 1-8**  
**Health Expenditures and Out-patient Measures**  
**by Level of Health System (1990)**

EXPENDITURE PER OUTPUT MEASURE	LEVELS			
	I	II	III & IV	All
% of Total Recurrent Health Exp.	27	13	60	100
No. of Beds <sup>a</sup>	5,076 (41%)	2,395 (19%)	4,978 (40%)	12,449 (100%)
Total Bed-Days (millions)	0.6 (25%)	0.5 (21%)	1.3 (54%)	2.4 (100%)
Out-patient Visits (%)	81	9	10	100
Expenditure per bed (million of MT)	2.6	2.7	5.8	3.9
Expenditure per bed-day (MT)	22,080	12,704	22,154	20,167

Sources: Razak and Segall, 1992, Table 20.

No. of beds, bed days from STATS

Notes: (a) Includes beds at all Levels of the health system, I, II, III, and IV.

In addition, the fact that expenditures per bed at Level III and IV facilities (5.8 million MT) is double the expenditure at lower level facilities (2.7 at Level II and 2.6 million MT at Level I) can be at least partially justified by the intensity of care which would be expected at the highest level facilities. If the referral system is working properly, the sickest patients, on average, would be found at Level III and IV facilities. Their cost of care would normally be significantly higher than for less acute cases at lower levels.

There is some evidence, however, that the referral system is not working as designed. In 1988, 85 percent of patients at Maputo Central Hospital were

residents of Maputo; 13 percent were from the Southern Region, and one percent each from the Central and North Regions. This suggests that Level III and IV facilities overwhelmingly benefit the residents of the cities in which the facilities are located, rather than serving the whole population of a region or a province.

In summary, it is difficult to say whether the different levels of the health systems are receiving the "correct" proportion of resources or not. Higher levels would be expected to consume more resources per patient than lower levels. In very general terms, however, the fact that primary care facilities (Levels I and II) have 60 percent of total beds and see 90 percent of all out-patients suggests that their allocation of 40 percent of recurrent expenditures is inadequate.

#### 1.1.4.2. Health Personnel

Health personnel, like other resources, are concentrated at higher level facilities. The normal rationale for this is that higher level facilities require more personnel, and more highly trained personnel, than lower level facilities.

Provincial and central hospitals employ 76 percent of all doctors, as shown in Exhibit 1-9. The remaining 24 percent of doctors are at rural and general hospitals (15 percent) and health centers (nine percent). Maputo Central Hospital alone has 27 percent of the country's doctors (which is down considerably from the 41 percent it had in 1985)<sup>7</sup>. The city of Maputo has 58 percent of all doctors (not including doctors working in the central ministry).<sup>8</sup>

Other personnel appear to be more equitably allocated. For example, Level I facilities, which are responsible for 42 percent of in-patient visits and 81 percent of out-patient visits, have 47 percent of the medical technicians and agents, 43 percent of the nurses, 65 percent of the midwives, and 80 percent of the preventive health agents.<sup>9</sup> Similarly, as shown in Exhibit 1-10, Level II facilities, which are responsible for 20 percent of in-patient stays and nine percent of out-patient stays, have between 15 and 19 percent of health personnel.

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<sup>7</sup> PRAAPNS, p. 41.

<sup>8</sup> STATS, p. 91.

<sup>9</sup> Ministry of Health, Informação Estatística Anual, 1990.

**EXHIBIT 1-9**  
**Percentage Distribution of Certain Categories of Health Personnel by Level of the Health System (1989)**

HEALTH WORKER	LEVEL OF HEALTH CARE SYSTEM			
	I	II	III & IV	TOTAL
Doctor	9	15	76	100
Med. Tech. and Agent	47	19	34	100
Nurse	43	18	39	100
Midwife & MCH Nurse	65	19	16	100
Preventive Tech. and Agent	80	18	2	100

**EXHIBIT 1-10**  
**Number and % of Hospital Stays & Out-patient Visits by Level of the Health System (1989-1990)**

Output Measure	LEVEL I	LEVEL II	LEVELS III&IV	TOTAL
Hospital Stays N	191,486	91,681	174,819	457,986
(%) (1989)	42	20	38	100
Out-patient Visits N	4,554,397	524,129	568,918	4,657,444
(%) (1990)	81	9	10	100

Sources: Razak and Segall, 1992, Table 21; In-patient and Out-patient data from MOH - 1990

Notes: (a) Includes personnel paid by the government and by foreign assistance.

### 1.1.5. Allocation of Resources by Urban and Rural Areas

#### 1.1.5.1. Recurrent Expenditures

There are large disparities in per capita health expenditure in urban versus rural areas. This is not surprising, given the previous discussion on distribution of resources by level of facility. Levels tend to correspond to rural and urban areas, with Level III and IV facilities in urban areas and Level I and II facilities in rural areas.<sup>10</sup>

<sup>10</sup> Urban areas have some health centers and maternities which are considered Level I and II facilities.

Exhibit 1-11 shows that while it is estimated<sup>11</sup> that 80 percent of the population lives in rural areas, recurrent spending in those areas is only 33 percent of the total. This results in 1,600 MT per capita expenditure in rural areas compared to 12,300 MT per capita in urban areas, a more than seven-fold difference. The city of Maputo is one of the main causes of the distortion: Maputo Central Hospital accounts for 26 percent of total recurrent expenditure in urban areas.<sup>12</sup>

**EXHIBIT 1-11**  
**Recurrent Expenditures, Covered by Government and Donors,**  
**in the Health Sector (1990)**  
**(in 1991 prices)**

	URBAN <sup>c</sup>	RURAL <sup>c</sup>	TOTAL
EXPENDITURE <sup>a</sup> (billion MT)	41.9	20.8	62.7
POPULATION <sup>b</sup> (millions)	3.4	12.8	16.2
PER CAPITA ANNUAL EXPENDITURE (MT)	12,300	1,600	3,900

Sources: Razak and Segall, 1992, and MOH, 1990

- Notes:
- (a) Excludes expenditures on Training and Other (Central Ministry, maintenance and supply centers, National Health Institute, central laboratories, and other).
  - (b) Based on Razak and Segall, 1992 estimate for 1991, and distributed to urban and rural areas based on MOH 1990, p. 61.
  - (c) Urban defined here as Level I and II facilities in the city of Maputo, plus all Level III and IV facilities, and Maputo Central Hospital. Rural includes all Level I and II facilities outside the city of Maputo.

It can be argued that the concentration of health resources in urban areas is a necessary result of the referral system. Thus some disequilibrium of per capita expenditure between rural and urban areas is to be expected. However, even if expenditures on non-referral, primary care (Level I and II) facilities are compared, urban areas still receive a disproportionate share of resources. In Maputo, the 1991 per capita expenditure on Level I and II facilities was 4,230 MT, compared to 1,600 MT on Level I and II facilities in rural areas, a 250 percent difference.<sup>13</sup>

<sup>11</sup> The last census was in 1980. Since that time there has been substantial migration and dislocation of populations due to the civil war. Some estimates suggest that one-third of the population has been affected (World Bank, forthcoming). This has a strong negative impact on the accuracy of population estimates by rural and urban areas, and by province.

<sup>12</sup> PRAAPNS, Table 31A.

<sup>13</sup> PRAAPNS, Table 31A.

### 1.1.5.2. Health Personnel

While this report shows that the distribution of health personnel by level seems relatively balanced (with the exception of doctors), distribution by urban versus rural areas appears unbalanced. Exhibit 1-12 shows how certain categories of personnel are distributed in absolute numbers and in terms of population per health personnel. The unbalanced allocation is seen most clearly in population per health personnel. In urban areas, there is one doctor per 9,300 people, while in rural areas, there is only one doctor per 337,200 people, or 36 times more people per doctor.<sup>14</sup> Even preventive health personnel (preventive health technicians and agents), are concentrated in urban areas, with one per 14,100 population in urban areas compared to one per 59,100 in rural areas, a more than four-fold difference.

**EXHIBIT 1-12**  
**Distribution of Health Personnel by Urban and Rural Areas**  
**(1990)**

TYPE OF PERSONNEL	NUMBER		POP. (000) PER PERSONNEL	
	URBAN	RURAL	URBAN	RURAL
Doctor	350	37	9.3	337.2
Medical Tech. & Agent	244	191	13.3	65.3
Nurse	2087	1460	1.6	8.5
Midwife and MCH Nurse	680	459	4.8	27.2
Preventive Tech. & Agent	231	211	14.1	59.1
<b>TOTAL</b>	<b>3592</b>	<b>2358</b>	<b>0.9</b>	<b>5.3</b>

Sources: MOH 1990, Table 3.2.7

Notes: (a) Excludes MDs working for central Ministry of Health.  
(b) Includes health workers employed both by GOM and foreign donors.

<sup>14</sup> The national ratio of population to doctors, approximately 41,000, is nearly twice the average for Sub-Saharan Africa (World Bank, "Better Health in Africa," Table 15).

### 1.1.6. Allocation of Resources by Province

Exhibit 1-13 shows the distribution of health expenditures<sup>15</sup>, hospital beds, and health personnel by province. (More detailed tables, with data on all provinces, can be found in the Annex.) Most favored on a per capita expenditure basis are Maputo City<sup>16</sup>, Sofala, Niassa, and Gaza. Maputo City receives 17 times more expenditures per capita than Zambezia, which receives the lowest expenditure per capita. Even excluding Maputo City, there is still a five-fold difference in per capita expenditures between the next most-favored province, Sofala (3,270 meticais/capita), and the least-favored province, Zambezia (674 meticais/capita). Sofala also has approximately three times as many beds per 1,000 population as Zambezia (again excluding Maputo City).

The distribution of primary health care workers (MCH personnel) is also similar, with Maputo Province having one-third as many people per personnel as Zambezia. Nampula and Cabo Delgado are also often among the least well supplied with health resources, and Sofala and Inhambane are generally among the most well-off.

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<sup>15</sup> Not all data on health expenditures were readily available on a per province basis. In this section expenditures include Government recurrent expenditures (salary and operating costs), drug expenditures, and donated goods which were reported by the Direcção de Aprovisionamento (Supplies Department) of the MOH in its 1990 report. Excluded from these expenditures are direct donor support for provincial or district recurrent health expenditures, donor supplies transported directly to the provincial level by the donor, and construction and rehabilitation.

<sup>16</sup> The capital of Mozambique, Maputo, is generally referred to in this report as "Maputo City." It is located in the province of Maputo, and is generally referred to here as "Maputo Province."

**EXHIBIT 1-13**  
**Distribution of Expenditures, Hospital Beds, and MCH Personnel**  
**by Province (1990)**

	Most Resources	Fewest Resources
Expenditure per Capita (000 MT)	Maputo City 11.6 Sofala 3.3 Inhambane 2.2 Niassa 2.1	Zambezia 0.7 Nampula 0.9 Cabo Delgado 1.4
	<b>Ratio Most/Fewest: 16.6</b>	
Beds* per 1000 pop.	Maputo City 2.8 Sofala 0.9 Gaza 0.9 Inhambane 0.9	Zambezia 0.3 Maputo P. 0.6 Tete/Nampula 0.6
	<b>Ratio Most/Fewest: 9.3</b>	
1000 pop. per maternal and child health personnel	Maputo City 2.6 Maputo P. 9.7 Sofala 12.1 Inhambane 12.2	Zambezia 31.8 Nampula 30.0 Cabo Delgado 21.8
	<b>Ratio Most/Fewest: 12.2</b>	

Sources: MOH 1990, MOF, Razak and Segall, 1992, MOH Supply Department 1990 Report

Notes: (a) Excludes psychiatric and physical therapy beds.

Exhibit 1-14 provides expenditure data on per bed, per bed-day, and per out-patient visit bases. (More detailed tables, with data on all provinces, can be found in the Annex.) In the first instance (per bed), Zambezia, Nampula, and Tete receive the fewest resources — one-half to one-third as much as Sofala. In terms of expenditures per bed-day and per out-patient visit, Manica and Gaza are least favored, while Cabo Delgado, Niassa, and Maputo Province are most favored.

**EXHIBIT 1-14**  
**Comparison Among Provinces of Expenditures per Bed,  
per Bed-Day, and per Out-patient Visit (1990)**

Expenditure	Most Resources	Fewest Resources
Per Bed <sup>a</sup> (000,000 MT)	Maputo City 4.2	Nampula 1.4
	Sofala 3.5	Manica 1.7
	Niassa 2.9	Zambezia 2.0
	Maputo P. 2.8	
	<b>Ratio Most/Fewest: 2.9</b>	
Per Bed-Day (000 MT)	Maputo P. 17.7	Nampula 9.1
	Cabo Delgado 16.0	Manica 9.2
	Niassa 14.6	Gaza 9.3
	<b>Ratio Most/Fewest: 1.9</b>	
Per Out-patient Visit (000 MT)	Cabo Delgado 14.0	Manica 3.6
	Niassa 6.4	Gaza 3.9
	Maputo P. 6.3	Tete 4.0
	<b>Ratio Most/Fewest: 3.9</b>	

Sources: MOH 1990, MOF, Razak and Segall, 1992, MOH Supply Department 1990 Report.

Notes: (a) Excludes psychiatric and physical therapy beds.

Interestingly, a comparison among provinces of the expenditures per unit of output (e.g., bed-day or out-patient visit), reveals a more even distribution of resources than when they are compared solely on the basis of per capita expenditure or beds per capita. In contrast, for expenditures per bed-day and expenditures per out-patient visit, the most well-off province receives twice as much and four times as much, respectively, as the least well-off province. For expenditure per capita and MCH personnel per capita, the difference between most-favored and least-favored province is 17 times and 12 times, respectively. As was seen earlier with comparisons of different levels of the health care system, possible explanations for the relatively more even distribution of resources per output are either:

- 1) MOH allocates resources on the basis of past, or expected, outputs.
- 2) Provinces that receive fewer resources are unable to produce as many outputs, that is, they must cut back on the number of patients they treat. The result is approximately equal expenditures per output, even between provinces which receive greatly different amounts of resources per capita.

Which of these alternative explanations is correct? Probably the second. This means that provinces which receive fewer resources per capita have a reduced ability, compared to other provinces, to treat patients. Zambezia, Nampula, and Cabo Delgado, the most resource-poor provinces (in terms of health inputs) per capita, also provide the fewest out-patient visits and bed-days per capita.<sup>17</sup>

#### 1.1.7. Distribution of Resources by Programs

The MOH's approach to health programs such as vaccinations, family planning, and MCH is to integrate them into primary care services. Rural hospitals, health centers, and health posts provide a mix of services. In a single day, a health worker may provide a child vaccination, distribute condoms, and treat an infant for diarrhea without differentiating in his or her mind that three different "programs" were involved.

The fact that programs are so intertwined in practice makes it difficult to determine, with any precision, which programs receive more funding than others. Two attempts were made, the first using 1990 data from the MOF State Investment Budget; the second using data from the MOH Direção de Aprovisionamento (Supply Directorate) of the total value of goods received from abroad during 1990.

The MOF Investment Budget devotes a page to health, listing 49 different donor projects. While they are listed in the Investment Budget, these projects actually are a mixture of investment and recurrent support to the health sector. In most cases, there is a small (about eight percent) GOM counterpart contribution to these projects.

Comparing these projects for 1990 in terms of their financing gives the following results:

<u>Project/Program</u>	<u>Cost (000,000 MT)</u>
Nutrition	4359
AIDS	1572
EPI	1052
STDs	704
TB and Leprosy	664
Malaria	641
EDP	413
MCH	373

This suggests that nutrition and AIDS programs receive many times more resources than malaria, essential drugs (EDP), and MCH programs. These figures should only be considered as rough estimates, as donor programs often spend very different amounts than budgeted. Programs often have a multi-year life span which makes prospective estimates of annual expenditures problematic.

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<sup>17</sup> Bed-day information is missing for Zambezia for 1990. However, since Zambezia is among the provinces receiving the fewest health resources, and given that it produces among the fewest out-patient visits per capita, it is assumed that it is also a low per capita producer of bed-days.

Interviews with directors of AIDS and MCH programs confirmed the general ranking of programs. In 1992, the AIDS program had an available budget (overwhelmingly from donors) of \$1.14 million US, 61 percent of which had been spent as of September 30. If, on the other hand, records from the Direção de Aprovisionamento are consulted, the programs have a different ranking in terms of the amount of resources they receive. This is probably due to the fact that resources other than goods (training, technical assistance, locally purchased goods and services, etc.) are not included.

#### 1.1.8. Recommended Reallocations

How should budgetary resources (and health personnel) be allocated in a country like Mozambique?

The short answer to this question is: from provincial, central, and specialized hospitals (Levels III and IV) to rural hospitals (Level II), health centers, and health posts (Level I). Currently, Level III and IV facilities combined receive approximately 60 percent of recurrent health expenditures (Razak and Segall, 1992, Table 31A). The recent MOH document, Razak and Segall, 1992, acknowledges the need for such a reallocation and provides an investment plan for its achievement.

Salaries appear to be consuming a larger and larger share of GOM health expenditures. The effect is a reduction in supplies, fuel, and other operating expenses required to effectively run the health system. More resources are needed in certain provinces, as demonstrated in this report, specifically Zambezia, Napmula, Cabo Delgado. However, there must be a concomitant increase in the capacity to manage the resources (e.g., like Swiss Cooperation and UNICEF supporting new administrative people in Zambezia).

A more difficult question is how, operationally, to achieve the reallocations. A comparative analysis of available resources, utilization, and health indicators (e.g., infant mortality rates), by province will help in making more precise resource allocation judgements. The section of this report on FISS presents other ideas.

#### 1.2. POPULATION HEALTH COVERAGE (ACCESS)

Various sources which discuss the Mozambique health care system state that currently less than 50 percent of the population has access to appropriate health care services. UNICEF's State of the World's Children cites overall coverage at 39 percent. UNICEF defines access as the "percentage of the population that can reach appropriate local health services by the local means of transportation in no more than one hour."<sup>18</sup>

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<sup>18</sup> UNICEF, State of the World's Children, 1990, p. 100.

### 1.2.1. Reasonable Coverage Rate

What can reasonably be expected of Mozambique's health system in the near future if more resources were available and or greater efficiency in delivering services were achieved?

In the next five to 10 years, a 60 percent coverage rate should be achievable. It would be based on a 95 percent coverage in urban areas where approximately one-fifth of the population resides, and 50 percent coverage in rural areas where the remaining four-fifths of the population lives. The figure of 60 percent is loosely based on current vaccination coverage rates in Mozambique and health coverage rates in other African countries. Both are discussed in the following text.

#### 1.2.1.1. Mozambique's Vaccination Coverage Rate

Mozambique's EPI program vaccinated 60 percent of 0 to 11 month-old infants with the *Bacille Calmette Guerin* (TB immunization known as BCG) and measles antigens. In the city of Maputo, the coverage rate for these two vaccinations was 95 percent.<sup>19</sup> Based on the MOH's (and donor programs) ability to reach these populations with vaccinations, it should be possible to provide a range of other services, if the resources and managerial capacity were available. Based on a target population coverage of 60 percent and assuming 95 percent urban coverage, rural coverage required is 50 percent.

#### 1.2.1.2. Health Coverage in Other African Countries

The coverage rate of 60 percent also appears reasonable in light of achievements in other sub-Saharan African countries. A sample drawn from UNICEF data shows that while there are other countries with lower coverage rates than Mozambique, there are also many with higher coverage. Some of the higher coverage rates, as shown in the Exhibit 1-15, include Congo, with 83 percent total, and Zimbabwe, with 71 percent. The Ivory Coast and Rwanda are examples of countries with lower coverage rates than Mozambique.

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<sup>19</sup> MOH, 1990, p. 129.

**EXHIBIT 1-15**  
**Percent of Population in Selected Sub-Saharan African Countries**  
**with Access to Health Services in Urban and Rural Areas (1985-1987)**

COUNTRY	TOTAL	URBAN	RURAL
Congo	83	97	70
Zimbabwe	71	100	62
Uganda	61	90	57
Ghana	60	92	45
Burkina Faso	49	51	48
<b>MOZAMBIQUE</b>	<b>39</b>	<b>100</b>	<b>30</b>
Ivory Coast	30	61	11
Rwanda	27	60	25
Median for 28 Countries with High Child Mortality Rates (Worldwide)	69	95	50

Source: UNICEF, State of the World's Children, 1990

Increasing Mozambique's health coverage from its current level of approximately 40 percent to 60 percent would put it on par with Uganda and Zimbabwe.

#### 1.2.1.3. Assumptions

Achieving a 60 percent coverage rate assumes that the current peace agreement with the RENAMO insurgency holds, and that areas currently inaccessible for security reasons become safe for health activities. It also assumes continued real annual growth in health spending; the World Bank recommends 4.5 percent per year. Finally, regional coverage disparities will persist at least in the near future. For example, in 1990, the province of Cabo Delgado achieved a 39 percent BCG coverage rate, whereas the province of Niassa achieved 87 percent coverage.

#### 1.2.1.4. Ministry of Health Coverage Projections

The closest that the Razak and Segall document comes to discussing the coverage rate is the section on rehabilitation and construction of health facilities. Exhibit 1-16 shows how rehabilitation of 26 and the construction of 16 rural hospitals will improve access to rural hospitals. When access is defined simply as the ratio of population to hospitals, the expected improvement

will be, nationwide, from 611,000 inhabitants per rural hospital in 1990 to 475,000 inhabitants per rural hospital in 2000.

**EXHIBIT 1-16**  
**Number of Rural Hospitals and Population per Hospital in 1990,**  
**with Projections for the Year 2000**

INDICATOR	YEAR	
	1990	2000
Number of Rural Hospitals	22	37
Population per Rural Hospital (000)	611	475

Source: Razak and Segall, 1992, Table 27

MOH Planning Department personnel suggested that their coverage targets for the year 2000 is 40 percent for fixed (facility-based) services and 60 percent for mobile services (e.g., vaccination program). This is lower than the coverage rate discussed here: 60 percent for fixed and mobile services. Further discussion with the MOH is required to understand the assumptions behind their proposed coverage rate.

### 1.2.2. Minimum (or Expected) Services

With a coverage rate defined for the country, the next question is, what services should be provided to the population? The GOM supports a PHC approach which is reflected in the MOH's Sectoral Plan 1992.<sup>20</sup> From the plan, key preventive health services have been selected, focusing on vaccination and MCH interventions, which can be carried out at health posts and health centers in rural and urban areas. The PRAAPNS document also emphasized PHC, mentioning specifically the Essential Drugs Program, vaccinations, and the control of communicable diseases. In addition to preventive and promotive care, curative visits, hospitalizations, and maternity care will be required.

In general, the services and programs discussed here have been selected because of their cost-effectiveness in reducing morbidity and mortality. PHC programs, such as EPI and vector control, are estimated to cost \$250 US per additional life saved, as compared to between \$500 and \$5,000 US per additional life saved for curative care.<sup>21</sup> A recent World Bank document also supports a

<sup>20</sup> Republic of Mozambique, Ministry of Health, "Plano Sectorial - 1992, 1ª Versão," February 1992.

<sup>21</sup> Forthcoming World Bank document on Mozambique, 1992.

PHC approach. It suggests that 90 percent of health care needs can be met at the health center level, with the remaining 10 percent requiring hospital services.<sup>22</sup>

A list of the minimum services and the desired units per person (or dollar value) is provided here:

<u>Service</u>	<u>Quantity Per Person</u>
Curative Out-patient Visits	2
Hospitalizations (bed-days)	C.23
Pharmaceuticals (expenditure)	\$1.00 US
Immunizations (child)	8
Tetanus Immunizations for Women	2
Family Planning Visits	1
Prenatal Consultations	1
Institutional Deliveries	1
Post-Natal Consultations	1
Well-Baby Visits (0-11 months)	1
Well-Child Visits (0-4 years)	1

Some services that have not been specifically addressed are: AIDS, sexually transmitted diseases (STDs), malaria, nutrition, acute respiratory infections (ARI), and diarrhoeal disease. Several of these programs/diseases can be addressed through the services proposed. For example, nutrition and diarrhoeal disease issues can be covered at well-baby and well-child visits; malaria, ARI, and STDs would normally be treated at curative visits. Family planning visits might also include AIDS prevention. Pharmaceuticals is not a specific service, but it has been recommended that one dollar's worth of essential drugs is sufficient to meet the minimum health care needs in most developing countries (World Health Organization).

### 1.2.3. Unit Costs and Total Costs

Exhibit 1-17 provides estimated unit costs, units needed, and the total cost of achieving 60 percent coverage for these services. Since urban and rural coverage rates are different, they were calculated separately. For simplicity, however, only total (urban and rural combined) units and total costs are shown.

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<sup>22</sup> World Bank, "Better Health In Africa", 1992.

**EXHIBIT 1-17**  
**Units and Costs of Minimum Health Services (1990)**

SERVICE	UNIT COST (1990 US\$)	UNITS NEEDED (000)	TOTAL COST (millions US\$)
Out-patient Curative	1.81 <sup>a</sup>	18,304	33.12
In-patient Days	3.14 <sup>a</sup>	2,105	6.62
Pharmaceuticals	1.00 <sup>b</sup>	9,152	9.15
Fully Immunized Child	15.00 <sup>c</sup>	506	7.60
Immunized Women	1.81 <sup>d</sup>	2,087	3.78
Family Planning Visits	1.81 <sup>d</sup>	2,087	3.78
Prenatal Care	1.81 <sup>d</sup>	458	0.83
Institutional Delivery	9.12 <sup>a</sup>	412	3.75
Post-Natal Care	1.81 <sup>d</sup>	162	0.29
Well-Baby Care	1.81 <sup>d</sup>	366	0.66
Well-Infant Care	1.81 <sup>d</sup>	1,583	2.87
SUB-TOTAL			\$72.44 US <sup>e</sup>
SUB-TOTAL TRAINING AND ADMINISTRATION (16% <sup>f</sup> )			\$10.74 US
TOTAL			\$83.18 US

- Notes: (a) Based on average costs at Inhambane and Tete provincial hospitals, and Jose Macamo Hospital in Maputo.
- (b) WHO minimum recommended essential drug program expenditure per capita for most developing countries. MOH has agreed to this target.
- (c) Average cost per fully immunized child. USAID: REACH Project, Arlington, Virginia, USA
- (d) Assumed to be approximately equal to the cost of an out-patient curative visit.
- (e) Not equal to sum due to rounding.
- (f) Based on Razak and Segall, 1992, Table 31A.

The resulting figure of \$83.18 million US is in 1990 dollars, and based on 1990 population estimates for Mozambique of 15.9 million people,<sup>23</sup> as cited in the recent MOH PRAAPNS document.<sup>24</sup> This translates into a per capita expenditure of \$5.23 US in 1990 dollars, using the same 1990 population estimate. For comparative purposes, 1990 actual recurrent expenditures were estimated at \$3.37 US per capita. The higher per capita level would entail a 55 percent increase in recurrent expenditures.

#### 1.2.4. Capital Costs of an Expanded Health System

The MOH has just completed an estimate of capital costs to rehabilitate the health system.<sup>25</sup> In general terms, it entails constructing and rehabilitating facilities so that the system will have coverage similar to what it was in the early 1980s, prior to the destruction caused by the war. The total cost has been estimated at \$278.9 million US (in 1991 dollars).

The plan calls for the construction of 15 new rural hospitals and 188 Mini-Health Centers (152 in rural areas and 36 in urban areas). In addition to the new construction, most of the Level I and II facilities in both rural and urban areas will be rehabilitated. The bulk of the investment, 67 percent, will be in rural areas; primary and secondary facilities in rural and urban areas account for 75 percent of the new investment.

Exhibit 1-18 shows the types of facilities, their number, and the unit cost of the construction and rehabilitation.

While the rehabilitation of the health system described here does not necessarily correspond with the recurrent cost estimates made in section D, it nonetheless is a useful estimate of capital costs that will be required in the near future. The MOH's estimate of the annual recurrent costs associated with the functioning of this expanded system (excluding the provincial, central, and specialized hospitals and the training centers) are \$31.4 million US (1991 dollars). This is equal to approximately 15 percent of the investment cost which is a reasonable, if somewhat optimistic,<sup>26</sup> expectation.

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<sup>23</sup> The last census was completed in 1980. Current population estimates are based on the 1980 figure and an estimated growth rate of 2.6%. The civil war has caused great dislocation of people, both internally, and abroad, making population estimates very difficult. A forthcoming World Bank document states that one-third of the population has been displaced by the war. Total population estimates vary considerably depending on the source consulted; however, they are generally in the range of 15.5 to 16.0 million people, with a recent MOH document citing 15.9 million as the 1990 population.

<sup>24</sup> Republic of Mozambique, "O Sector Publico de Saude em Mocambique: Uma Estrategia Pos-Guerra de Reabilitacao e de Desenvolvimento Sustentado", by A. Noormahomed, and M. Segall. August 1992, p. 2.

<sup>25</sup> Razak and Segall, p. 73.

<sup>26</sup> Heller (1979) estimates that district hospitals in developing countries generally incur annual recurrent costs equal to 11% to 30% of the initial construction and equipment costs. The estimates for rural health centers are 27% to 71%.

**EXHIBIT 1-18**  
**Cost Estimates for Rehabilitation and Construction**  
**of Health Facilities by the Year 2000**

Type of Facility	Number of Units	Total Investment Cost (millions US\$, 1991)
Rural Hospital	37	50.0
Rural Health Center	173	70.3
Rural Mini Health Center	661	66.1
Village Health Post	450	1.0
General Hospital	5	7.0
Urban Health Center	38	7.6
Urban Mini Health Center	84	8.4
Provincial Hospitals	7	35.0
Central and Specialized Hospitals	5	25.0
Training Centers	10	8.5
<b>Total</b>	<b>1,470</b>	<b>278.9</b>

Source: PRAAPNS

**1.3. BUDGETARY REQUIREMENTS FOR RECURRENT HEALTH EXPENDITURES**

As shown in Section 2.0, a minimum package of health services covering 60 percent of the population will require total recurrent costs of \$77.88 million US. As seen in Exhibit 1-2, 1990 recurrent expenditures for health (from both the GOM and donors) were approximately \$53.3 million US. This suggests that there is a resource gap between minimum needs and available financing of \$29.88 million US. Using 1990 as an example, this would mean a 55 percent increase in recurrent expenditure.

## **2.0. DESCRIPTIVE ANALYSIS OF THE BUDGET PROCESS**

### **2.1. INTRODUCTION**

The objective of this chapter is to describe and analyze the budgeting process used at district, provincial, and central levels. The description is related to the planning process of activities at the same levels, and to the monitoring of their implementation (in terms of financial performance and the actual activities implemented).

### **2.2. THE BUDGETING AND PLANNING PROCESSES**

#### **2.2.1. General Description**

The planning process was institutionalized in the MOH in 1977. In parallel, programming of public spending in the sector is made. In the course of the planning process, necessary and available resources (national and foreign) for fulfilling the programs are not defined, nor are precise indicators which could be used to measure the accomplishment of plans. For its part, the budget is not drawn up by the same entities which develop the programs and does not include all available resources (financial and material). Thus, for example, provincial budgets are drawn up before training plans for local implementation are approved. For funds originating from the national budget, MOH recurrent budgets are handled differently than investment budgets.

The recurrent budget is worked out at the provincial level and is divided at the central MOH into expenditures financed by the public budget and to revenues coming from cost recovery revenues; external funding in terms of cash, technical assistance, and goods is not considered.

Income and expenditure forecasts are presented in September each year by the MOH and by each DPS to the MOF and the Provincial Directorates of Finance (DPF), respectively, according to ceilings that the latter define. These forecasts are made on the basis of expenditures and revenues in the previous term, without considering the cost of activities, without quantifying activities to be carried out, additional external assistance expected (even though international assistance represented 61 percent of total operating costs of the sector at national level in 1991), or, in the case of the DPS, of goods and supplies to be received from MOH (even though these represent 20 percent and 15 percent, respectively, of total operating costs of the DPSs of Gaza and Cabo Delgado in 1991, excluding medicines). The MOH negotiates with the MOF to determine final budget ceilings for central structures and for the DPS. The DDSs are involved only in the budgeting process after the final ceiling on DPS expenditure has already been fixed, when they are then informed of the budget attributed to them.

At all levels it is possible, up to twice in a year, to ask for an internal redistribution of the sums attributed to operating costs, without altering the ceiling. In addition, the MOF normally gives twice yearly supplements to the recurrent budget.

The MOH investment budget is worked out at two levels: the main component at central level and small components directly in the provinces. In contrast to the recurrent budget, the investment budget includes the main donors (who financed 90 percent of investment in health for 1991). Exhibit 2-1 shows the proportion of 1991 investments decided at central and provincial levels and their sources of financing.

**EXHIBIT 2-1**  
**Central and Provincial Investment Budget for 1991**  
**(Million MT)**

	FINANCIER		TOTAL	
	STATE	DONORS	VALUE	%
Central Decision	3,257	35,252	38,509	96
Provincial Decision	1,731	-	1,731	4
<b>TOTAL:</b>	<b>4,988</b>	<b>35,252</b>	<b>40,240</b>	<b>100</b>

Source: General State Budget for 1991

The centrally determined investment budget in practice includes numerous operating expenses of health activities and technical assistance to health facilities, as presented in the following Exhibit 2-2. This situation is not unique in the world, as shown by studies from other countries (e.g., Niger, Portugal). The poorly defined concept of investment and lack of integration between the recurrent and investment budgets make it difficult to calculate the cost of activities and evaluate projects.

**EXHIBIT 2-2**  
**Centrally Decided Investment Budget for 1991**  
**(Million MT)**

	FINANCIER				TOTAL	
	STATE		DONORS		VALUE	%
	VALUE	%	VALUE	%		
<b>INVESTMENT PROJECTS:</b>						
* National implementation	2,370	6	7,628	20	9,998	26
* Implement. per province	187	1	2,810	7	2,997	8
<b>RUNNING OF HEALTH PROGRAMS:</b>	500	1	19,935	52	20,435	53
<b>TECHNICAL &amp; MEDICAL ASSISTANCE IN HEALTH UNITS:</b>	200	1	4,879	12	5,079	13
<b>TOTAL:</b>	<b>3,257</b>	<b>9</b>	<b>35,252</b>	<b>91</b>	<b>38,509</b>	<b>100</b>

Source: General State Budget for 1991

The provincially decided investment budget only covers small undertakings with local funding and implementation.

The planning process is carried out at MOH level, that is, from top to bottom. The MOH Planning Department sends instructions to the DPS around October each year to draw up the health plan, and to DNs to prepare their action plans. The DNs prepare activity programs without consideration of total resources available or required (material, human, and financial), nor cost or efficiency indicators for these activities. The programs are sectoral, and not integrated at MOH level, although their implementation is integrated at peripheral level health facilities. In preparing their programs, the DNs consider external financing and expect some recurrent expenses to be financed by the national budget. The integration and coordination of different sectoral activity programs is also not done by the Planning Department, which only sums up the main indicators and gives them to the National Planning Commission (CNP).

The DPSs present their health plans to the Planning Department around November each year, without prior information being given to them about available human, financial, and material resources; the health plans are not based on cost or efficiency indicators, nor do they identify resources needed for their implementation. As with the DN activity programs, the Planning Department sums up the main indicators of the project proposals it receives and works out the health plan for approval by the CNP. The DDSs do not participate in the project proposal stage, dividing afterwards the sums given to them by the DPSs.

In sum, as regards timing, the budgets are presented to the MOF/DPF in September and the health plan in November; the budget is prepared by the financial departments (DAF at central level and RAF in the provinces). There is poor coordination between planning and budgeting, and there are technical

weaknesses in both budgeting (which is not based on indicators, activities and costs) and planning (which does not guarantee the best use of available resources) processes.

The National Plan and the Provincial Investment Plans are prepared by the DP and DPS, respectively, and are integrated in the Triennial Public Investment Program (PTIP). They do not consider additional operating costs or human or material resource needs, which result from making investments in equipment and infrastructure in the health sector.

### **2.2.2. Consideration of the District Level Budget**

In accordance with the earlier description, the DDS is merely informed of its budget after the event, without contributing to its development. One explanation for this was made in Chokwe in Gaza Province — requests made by DDS according to its assessment of needs have made no difference in the past in the budget it finally receives, making the exercise useless.

Already in relation to the investment budget, the DDSs have a minimum role, as investments are usually decided and their implementation controlled from outside the district (by the DPS, MOH, or donors). The DDSs have a certain measure of decision-making autonomy in the use of their Recurrent Budget; in some provinces, the DPS gives the districts spending ceilings for the main health units (rural hospital, health centers) separated from the operational ceiling of the State Apparatus. The DDSs always have the right to suggest changes in the budget distribution, which must be approved by the DPS and DPF.

Activities linked to preventive medicine programs have a sum for general use. In the Chokwe-Gaza district, this sum was only 400,000 MT (approximately \$120 US<sup>27</sup>) for 1992. This is not an accurate representation of the total resources devoted to preventive care, since PHC activities, which are financed by GOM and donor funds, include preventive activities.

The DDS do not calculate the costs nor prepare any estimate of expenditure which encompasses receipts in goods (i.e., medicines, clothes, medico-surgical material, food) or needed or expected donations.

### **2.2.3. Overview of Provincial Level Budgets**

The provincial level budgeting process is based more on public revenues and spending which occurred in the previous period than on consideration of planned activities, their costs, or efficiency (which the DPSs do not calculate). Needed or anticipated inputs are not estimated, either coming from the MOH (flow of goods and additional flow of funds to implement various activities) or from donors (donations in cash, goods, and technical assistance). Thus, the DPSs' traditional complaint of insufficient funds and resources is never founded on a general analysis of planned inputs and a quantification and valuation of their outputs (activities).

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<sup>27</sup> At the 1992 official exchange rate of 3300 MT per \$1.00 US.

The present structuring of the recurrent budget allows the DPS to analyze spending by level of care, although these will be approximate values. Some DPSs (e.g., Gaza) separate the rural hospital budget from the health center and DDS budgets, allowing them to separate the spending for Levels II and I. Other DPSs (e.g., Sofala) give a single sum to each district, with no direct division between Levels I and II. Funds for Level III activities and facilities come from the provincial hospital budget.

Training expenses are fully included in the DPS budget. The only exception is training of medical staff, which is the responsibility of the Ministry of Education.

Channelling goods from central level to the periphery is done by the Supply Directorate through the DPSs, with the exceptions of Sofala and Nampula which, as they are served by major ports, sometimes make regional distributions. The DPSs also receive goods directly from some donors. An idea of the proportions is shown in Exhibit 2-3.

**EXHIBIT 2-3**  
**Inputs in Cabo Delgado and Zambézia (1991)**  
**(Thousand MT)**

	CABO DELGADO		ZAMBEZIA	
	ANNUAL VALUE	%	ANNUAL VALUE	%
Materials received:				
* SNS	269,143	34	4,389	22
* Other Sources	399,403	66	15,394	78
Total:	668,546	100	(a) 19,783	100
OGE (Expenditure):				
* Salaries Fund	728,500	65	1,163,300	62
* Materials Fund	390,800	35	715,720	38
Total:	1,119,300	100	1,879,020	100
Proportions:				
* Mat. received/OGE-Materials Fund		171%		3%
* Mat. received/OGE-Total		60%		1%

Source: Reports to the CCS on 1991 Activities in Cabo Delgado and Zambézia, March 1992)

Note: (a) This value is probably highly underestimated: In first semester of 1992, for example, donors planned to give Zambézia 2,750 million MT, which is over a hundred times greater than the amount listed as "other sources" for 1991.

The DPSs propose the investment plan and budget be funded by the province, but all the major investments are decided by the MOH.

### 2.3. OVERVIEW OF THE NATIONAL LEVEL BUDGET

The MOH operational budget encompasses the central health apparatus and various autonomous public institutions classified as being national, including the Maputo Central Hospital. The following exhibit shows the distribution of the 1991 operational budget between central and provincial levels.

**EXHIBIT 2-4**  
**Operational Budget Realized for 1991:**  
**Distribution Between Central and Provincial Structures**  
**(Million MT)**

	CENTRAL	%	PROVINCIAL	%	TOTAL	%
Salaries Fund	5,136	28%	13,039	72%	18,175	100%
Materials Fund	2,461	20%	9,683	80%	12,144	100%
<b>TOTAL</b>	<b>7,597</b>	<b>25%</b>	<b>22,722</b>	<b>75%</b>	<b>30,319</b>	<b>100%</b>

Source: Planning Department/MOH

The weight of the Maputo Central Hospital and the Central State bureaucracy in the budget for central structures for 1991 is shown in Exhibit 2-5:

**EXHIBIT 2-5**  
**Proportional Distribution of Operational Budget**  
**by Central Structures (1991)**

	STATE BUR. (%)	CENTRAL H. MAPUTO (%)	OTHERS INSTIT. (%)	TOTAL (%)
Salaries Fund	43	46	11	100
Materials Fund	31	34	35	100
<b>TOTAL</b>	<b>37</b>	<b>40</b>	<b>23</b>	<b>100</b>

Source: General State Budget for 1991

Concerning the budget of nationally defined programs (MCH, nutrition, EPI, etc.), donor inputs are accepted at central level and taken into consideration in the process of planning activities, but not in the budgeting process; program budgets do not cover total costs of national level activities; part of the operating costs for these programs is financed by the investment budget and implemented in the provinces.

To sum up, "the programming process for health expenditure is done independently of the planning for material expenditures."<sup>28</sup>

## 2.4. EXECUTIVE CONTROL

### 2.4.1. Financial Execution

The MOH, through its administration and financial structures at central (DAF), provincial (RAF), and district (SAF) levels, is responsible for financial execution of the General State Budget and of direct management of donations (funds given to the MOH by donors for previously agreed objectives).

A dual system within the MOF exists for the financial execution of the operational budget: a working fund, called the Permanent Fund (Fundo Permanente), is given to each autonomous service, deposited in a bank account, and replenished monthly (or when it has been spent) against presentation of receipts; in parallel, a simple-entry public accounting system (simple registration of realized expenditure against the bank account) is used to control each payment and each budget item.

The reality at all levels is that the Permanent Fund replenishing system functions reasonably well, since this is indispensable for receiving funds, but the officially approved accounting system is disregarded, usually not up-to-date, and performs no function of providing financial or management information. In its place, parallel registers are made in case of necessity, to show the situation of budgeted items. Generally, and even though this is meant to be mandatory, neither control nor reconciliation of bank accounts is made regularly. Especially in the peripheral districts, neither regular bank statements are obtained nor confirmation requested of the bank account balance.

Financial execution of the investment budget is centrally decided and basically controlled by a technical management unit of the National Planning and Cooperation Directorate (GACOPI) for investment projects, and by the National Health Department for activity programs. The investment budget decided at the provincial level is implemented in each province.

Financial management of directly managed donations for health is poorly executed because of weak administrative and financial structures and by the sudden growth of these donations in the last four years. At various levels, there has also been a proliferation of technical management units for external funds, some with permanent health staff, others with Mozambican staff under temporary contract for this work, and still others directed by expatriates, some of these integrated in MOH structures. Each technical unit tends to use the financial control systems of the donor, which multiplies the types of financial control practiced and adds to confusion in this area. The account registers of these projects are not integrated in the GOM accounting system.

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<sup>28</sup> In "Programação das Despesas de Saúde", R. Benjamin, C. Simone, and D. Costa, Ministry of Health, Maputo, June 22, 1990.

The information drawn from this process is fragmented, since it does not cover the whole of a project but only the part allocated to direct management by the MOH; more general information referring to annual financial programming is usually not included in this process. This information includes acquisition of goods (often directly carried out by the donor or under their control), contracting of technical assistance, and expenses related to this and to funds directly managed by the donor.

An exception to this situation is the integrated financial management program ongoing in Zambezia, whose goal is integrated planning of the province's financial and material resources. This program tries to channel all funds (MOH and donor) through the MOH Planning Department for direct management by the DPS, and to control all finances using the GOM accounting system. This pilot experiment is described with more detail in the following chapter.

An idea of the weight and importance of integrated control for public and donor financing is shown by the planned budget amounts for the first semester of 1992 in Zambezia, where a group of donors plan on giving 2,750,500,000 MT to the health sector (against merely 987,000,000 MT foreseen in the operational budget for the same period).

#### 2.4.2. Distribution of Goods

An important and valuable flow of goods -- medicines, medical and surgical supplies, furniture and equipment, cars, forms, clothes and uniforms, etc. -- is distributed from central level to the DPS and from there to the DDS. These goods are distributed from the MOH because they come from donations, are imported, and enter through the three main ports of the country, or are purchased in bulk by the MOH to get a better price. Exhibit 2-6 presents a comparison of the value of goods purchased with external financing with the total operational spending for the sector:

**EXHIBIT 2-6**  
**Comparison of Goods Purchased with External Funds**  
**and Operating Costs of the Health System (1989-1991)**  
**(Million MT)**

	EXTERNAL FUNDING			OGE/ RECURRENT (realized)
	MEDICINES	OTHER SUPPLIES(a)	SUB-TOTAL	
1989	8,095	1,300	9,395	13,450
1990	15,777	3,600	19,377	17,830
1991	22,498	4,578(b)	27,069	30,319

Source: Department of Planning/MOH and Razak and Segall, 1992

Notes: (a) Excluding equipment  
 (b) Estimate

The goods distributed via MOH are purchased either by MEDIMOC, the monopoly importer of medicines, directly by the Supply Directorate, or by donors (who send them from their countries of origin and are received in Mozambique by the Supply Directorate). Decisions about per province quota of goods are made by the DNs and carried out by the Supply Directorate and National Directorate of Health, which are responsible for delivering goods and certificates of value to the provincial capitals.

The receipt of centrally distributed goods is not subject to an accounting process integrated in the GOM accounting system. The criteria for evaluating goods distributed by the Supply Directorate requires revision and redefining. A project financed by UNICEF, described in more detail in the following chapter, has currently taken on the task of reviewing this situation. The criteria for evaluating medicines for the provinces also need revision and clarification.

The following Exhibit 2-7 compares the distribution of goods (including equipment and maintenance, but excluding drugs) from the Supply Directorate to the provinces in 1991, with the values of provincial budgets in the same period:

**EXHIBIT 2-7**  
**Goods Distributed in 1991 by the Supply Directorate,**  
**Compared to Provincial Budgets**  
**(Million MT)**

	DISTRIB. SUPPLY DIRECT.	PROVINCIAL BUDGET		
		OPERATION	INVEST.	TOTAL
Maputo Center H.	2,501	3,121	-	3,121
Maputo-City	6,841	4,075	57	4,132
Maputo-Prov.	429	1,129	139	1,268
Gaza	464	1,427	120	1,547
Inhambane	1,328	1,281	26	1,307
Sofala	1,364	2,603	-	2,603
Manica	555	1,082	23	1,105
Tete	361	2,023	15	2,038
Zambezia	1,142	1,879	133	2,012
Nampula	1,361	3,065	40	3,105
Niassa	2,396	1,173	968	2,141
Cabo Delgado	2,066	1,376	210	1,586
<b>TOTAL</b>	<b>20,808</b>	<b>24,234</b>	<b>1,731</b>	<b>25,965</b>

Source: General State Budget for 1991 and Activities Report of the Supply Department for 1991

Upon arrival in the province, the distribution of goods is the responsibility of the DPS. Management of stocks of goods is carried out by a different directorate than the one controlling accounting and financial information. Information about the value of goods allocated to each district is poor, both at the provincial and district levels, and is not available in aggregated form. Also at this level, distributed goods are not subject to any accounting process that is integrated in the Public Accounting System.

Apart from goods distributed by the MOH, both the DPS and DDS receive goods and services directly from donors. Most often, these deliveries are neither given monetary value nor reported to the level directly above for inclusion in global monitoring of resources used.

### 2.4.3. Other Information Systems in Operation

An epidemiological surveillance system for reportable illnesses has worked at the MOH since the NHS was created; since 1980, a health information system has also worked at national level, in which information collected by the Medical Units is sent via the DDS and DPS to the MOH, summarized by the Planning Department, and annually disseminated. In addition, several MOH directorates collect, process, and analyze data referring to activities developed through inquiries and samples. From this set of systems, information is obtained that is rich and diverse but inadequately processed, consolidated, analyzed, and disseminated; neither is it used for daily management, planning, and evaluation of activities.

### 3.0. THE FINANCIAL INFORMATION SYSTEM

This chapter analyzes the present situation with regard to availability of financial information and provides recommendations for strengthening its operation. Although the general situation of Mozambique means that the first priority must clearly be increasing health services delivery capacity, increased provision of services will require increased ability for managing the system, whether at central or local level.

Revision of the FIS is thus integral to efforts at generally strengthening the management of the NHS (or SNS), forming an indispensable element for its success. With the likely advent of peace, more resources will become available to the social sectors in general and to health in particular, allowing more service delivery, but creating new problems and a greater need for effective integrated management.

#### 3.1. THE OBJECTIVES OF FINANCIAL INFORMATION

The main purpose of financial information/management is to ensure an adequate volume of resources is available for providing needed health care to the community in the most efficient, cost-effective way. As part of this effort, the objective:

- a) Ensures availability of financial resources in appropriate volume and time to satisfy financial needs of the service providers and institutions, and
- b) Ensures funds are used cost-effectively, maximizing the level of services offered through appropriate planning and supervision processes.

The existence of a system that produces appropriate financial information to the various levels of responsibility is important to support the following activities (Bloom, 1988):

- The planning process needs financial information, allowing a matching of programmed objectives with limitations in terms of available financial resources;
- Through prior knowledge of financial flows, the budgeting process can be strengthened, integrating it into and complementing the planning methodology;
- Financial information is an essential element of proper services management, whether at individual level, where hospitals naturally stand out as the units consuming most resources, thus more demanding as to their management, or at the level of institutions (such as central MOH and provincial directorates) that should serve a coordinating function;
- The development of cost-recovery strategies should take into account not only the economic capacity of users to carry costs of the SNS, but also the operating costs of services offered;

- The knowledge of financial flows is essential to a solid external aid coordination policy. The success and sustainability of an investment project depends on prior consideration of operating costs (Kleinau, 1992). Beyond this, the large volume of small provincial and district level projects implies an additional effort at coordination to avoid hindering the MOH's "global strategy," and
- Decentralization of SNS activities is without doubt a positive measure. However, its success depends, among other things, on the existence of an information system which allows monitoring by the next higher level. A financial component is also essential.

### 3.2. THE PRESENT SITUATION

Analysis of the present situation is made as a function of specific objectives, trying to identify the currently available information and respective gaps. It will mainly deal with the central level, since at the local level the lack of suitably skilled human resources in administration means that there is no existing management information at all. Only tables and graphs which the central level MOH produces with regularity are shown; generally this information is not used at the local level.

Additional information can be obtained from other MOH departments. In fact, one characteristic of the present situation is the wide dispersal of data.

#### 3.2.1. Sources of Financing

Routine collection of information on sources of financing for the SNS (GOM budget, donors, users, users of Special Clinic) presents several gaps:

- Lack of knowledge of the value of donations in goods and services, and
- Lack of information, at the central level, of the amount of revenues generated by users.

In fact, only the amounts financed by the GOM budget are retrieved without difficulty. With recourse to other sources of information, however, it is possible to know the distribution of financing by origin (Exhibit 3-1).

**EXHIBIT 3-1**  
**Source of Financing for SNS (1991)**

SOURCE	VALUES (MILLION MT)	(%)
NATIONAL BUDGET	30,319	31.0
DONORS	65,907	67.3
USERS	1,700	1.7
TOTAL	97,926	100.0

Source: Razak and Segall (1992) and Table of User Charges 1991

**3.2.2. Combining Public and Private Health Care Services**

Although, until recently, PHC services were not legally allowed, it is useful to draw a matrix showing sources of funding and services offered in terms of whether they are privately or publicly financed or provided (Exhibit 3-2).

**EXHIBIT 3-2**  
**Matrix of Public/Private Services**  
**by Public/Private Sources of Financing**

		FINANCING	
		PUBLIC	PRIVATE
SERVICES	PUBLIC	<ul style="list-style-type: none"> <li>. Hospitals</li> <li>. Health Centers</li> <li>. Health Posts</li> </ul>	<ul style="list-style-type: none"> <li>. Medicines</li> <li>. Special Clinics</li> <li>. Out-patients and in-patients charges</li> <li>. Donations</li> </ul>
	PRIVATE	<ul style="list-style-type: none"> <li>. Treatment abroad (civil servants)</li> </ul>	<ul style="list-style-type: none"> <li>. Private clinics</li> <li>. Special clinics</li> <li>. Private clinics(a)</li> <li>. Company health services</li> </ul>

Notes: (a) No private clinics are currently operating but it is believed some will open in the near future.

The amount of private financing is already substantial. In fact, families pay for drugs, out-patient, and in-patient services (though at highly subsidized prices) and Special Clinic services at the central hospitals. Classification of foreign financial aid as private donations may be controversial, but seems the most appropriate categorization. Exhibit 3-3 attempts to quantify each element of the matrix, using the data already made available through the Survey of Families in Maputo City (National Planning Commission, 1992) carried out in 1991.

**EXHIBIT 3-3**  
**Combination of Public and Private Financing and Services**  
**in Maputo City (1991)**  
**(Million MT)**

		FINANCING	
		PUBLIC	PRIVATE
SERVICE	PUBLIC	HCM (a) 2,373 DSCM 3,455 TOTAL 5,828  (60.9%)	Swiss Fund 238 Families (b) 752 Other donors ??? TOTAL 990  (10.3%)
	PRIVATE	Treatments abroad (c) 120  (1.3%)	Families (b) 2,638 Companies ?  (27.5%)

Source: DSCM report, HCM Administration and National Planning Committee

- Notes:
- (a) Budget of Maputo Central Hospital (HCM)
  - (b) Values estimated from the Survey on Families in Maputo City (1991) and from information collected at the HCM
  - (c) Considering that the whole sum budgeted by the MOH was use by residents in Maputo.

Although the data are far from complete (as indicated by the question marks), the available evidence suggests that families make a large contribution to total revenues of the health sector, roughly a third of accounted resources, which represents 58 percent of the GOM budget contribution.<sup>29</sup> This suggests that a significant part of the population is prepared to pay a little more to get care which is of better quality or, at least, more accessible, than GOM health services. This conclusion, however, cannot necessarily be generalized to the rest of the country, since the most affluent part of the population is probably concentrated in the capital.

### 3.2.3. Budget Supervision

Available information on supervision of the budget at DAF level is summarized in Exhibit 3-4. A lack of information is evident even when the analysis is only done for the provincial level. There is a surprising lack of information about salaries, no matter what level of the service, though this apparently should be the easiest part of the budget.

<sup>29</sup> Family private expenditures are 2,638 + 752 = 3,390 million MT. GOM expenditures are 5,828 million MT, 3390/5,828 = 0.58, or 58%.

**EXHIBIT 3-4**  
**Budget Control (1992)**

PROVINCES	ANNUAL ALLOCATION		% IMPLEMENTATION	
	SALÁR.	MATER.	SALÁR.	MATER.
Central Structures	6,901	7,450	?	26.3
Niassa	879	724	?	?
C. Delgado	1,172	1,124	44.4	29.5
Nampula	2,301	2,257	?	29.7
Zambézia	1,464	1,261	?	15.4
Tete	1,471	1,265	35.9	33.4
Manica	1,023	859	47.4	40.6
Sofala (a)	2,102	2,044	70.4	60.6
Inhambane	1,075	740	?	23.8
Gaza	1,094	854	50.9	32.9
Maputo - P	811	732	?	43.2
Maputo - C	3,025	2,695	?	31.7
<b>TOTAL (b)</b>	<b>23,318</b>	<b>22,005</b>	<b>52.0</b>	<b>31.9</b>

Source: DAF financial information system

Notes: (a) Data relating to period January to September  
(b) Percentage used is only considered for Provinces which have information

As to the sums used, salaries amount to around 50 percent of what was expected (75 percent in the case of Sofala); the Materials Fund proves most difficult, perhaps explained by the late arrival in Provinces and Districts of the necessary allotments. Distribution of percentages of realized budget is very irregular, with a maximum of 43.2 percent in Maputo-Province and a maximum of 15.4 percent in Zambezia.

The situation becomes even more difficult when the volume of external aid is taken into consideration. Each program is implemented and supposedly supervised individually. An overall view is impossible due to lack of available information. In Zambezia Province, an effort has been initiated to end this situation, trying to integrate all sources of financing.

### 3.2.4. User Charges (Committed Funds)

Information about the amount of cost recovery revenues collected is also insufficient, as shown in Exhibit 3-5. For 1991, there is no information for three provinces: Nampula, Sofala, and Inhambane.

**EXHIBIT 3-5**  
**User Charges by Province (1991)**  
**(Million MT)**

PROVINCES	MEDIC.	OUT+IN-PATIENTS	SPECIAL CLINIC	TOTAL
Niassa	20,300	11,600	N/A	31,900
C. Delgado	25,200	N/A	N/A	25,200
Zambézia	9,935	11,000	N/A	20,935
Tete	36,600	8,900	N/A	45,500
Manica	.	23,125	N/A	23,125
Gaza	40,054	9,013	N/A	49,067
Maputo (C)	148,900	37,225	N/A	186,125
Maputo (P)	45,262	6,868	N/A	52,130
H.C.M.	106,975	27,029	758,531	892,535
<b>TOTAL</b>	<b>433,226</b>	<b>134,760</b>	<b>758,531</b>	<b>1,326,517</b>

Source: DAF, Provincial Report and HCM Administration

The total amount raised from users is estimated at between 1,300 and 1,700 million MT, representing 4.8 percent to 6.0 percent of operating expenditures provided by the national budget, a percentage considerably lower, by almost half, than the one registered in 1988 (Exhibit 3-6).

**EXHIBIT 3-6**  
**Evolution of Cost Recovery (1986-1991)**

YEAR	VALUE	% OGE SPENDING
1986	55.9 - 83.8	2.8 - 4.2
1987	287.5 - 444.5	6.4 - 10
1988	636.9 - 872.9	7.9 - 10.8
1989	215	1.6
1990	526 - 924	3.0 - 5.2
1991	1326 - 1724	4.8 - 6.0

Source: Durao and Pereira (1987), Razak and Segall (1992), World Bank (1990) DAF, Provincial Reports and HCM Administration

The evolution of the percentage of cost recovery in relation to public financing is erratic, due probably to problems of information, a symptom of which is the fact that to construct Exhibit 3-6, it was necessary to use six separate sources. Non-adjustment of prices since 1987, in a period when annual average inflation has been around 40 percent, seems to explain the fall in revenues experienced between 1988 and 1989. The present trend of a rising percentage of public cost recovery is due to the introduction in May 1991 of special clinics offering services payable in national currency.

Another aspect deserving comment is the non-integration into hospital budgets of costs recovered in the special clinics. Presently, at HCM, the special clinic collects payment directly from the patients. Later, a preset percentage (between 10 and 20 percent, according to the case) is remitted to the hospital treasury as hospital revenue. The special clinic keeps the remaining 80 to 90 percent (mostly used for payments to the doctors and nurses who provide the care). The most appropriate procedure would be to register all amounts collected in the special clinic in the hospital treasury, and then allocate a percentage to the special clinic to be used in accordance with the general regulations. This process would allow not only greater clarity, but also effective control by the hospital management of special clinic activities.

### 3.2.5. Spending on Care Given Outside the Country

The Mozambican State normally takes financial responsibility for medical treatment given to its staff abroad, if appropriate treatment does not exist within national territory. In 1991, 120 million MT were budgeted for this purpose, which seems to be a very low sum compared with a reference in a forthcoming World Bank report which estimated annual expenditure of \$500,000 US for medical and travel expenses for government employees abroad.

### 3.2.6. Calculating Unit Production Costs

In the early 1980s, the DNPC developed a methodology to calculate unit production costs at health care facilities. The results are far less than desired. In fact, at the end of 1992, only one hospital had calculated the relevant costs for the year 1991 and only three had calculated costs for 1990. These costs have never been calculated for Maputo Central Hospital; for Beira and Nampula Central Hospitals, the most recent calculations are for 1987 and 1988, respectively. For health centers, the most recent calculations are from 1987. Given these results, it is clear that determining unit costs is considered a bureaucratic exercise rather than a basic element in proper management of services. In addition, the results are affected by the usual non-accounting of donations, which is why, as a rule, the results are inaccurate; they fail to encompass total resources consumed in service delivery.

Based on information available for the year 1990 and considering Nampula Central Hospital values for 1988, duly adjusted for 1990, an attempt is made to calculate the average costs at national level. The results should be analyzed with due care given the limitations of the base information (Exhibit 3-7).

EXHIBIT 3-7  
Unit Costs for Health Services (1990)

SERVICE	UNIT	UNIT COST (MT)
IN-PATIENTS	Patients treated	16,125
OUT-PATIENTS	Consultations	1,681
EMERGENCIES	Emergencies attended	1,567
FOOD	Meals	121

SOURCE: DNPC

The amounts calculated are very low, reflecting the exclusion of costs for goods delivered as donations. An attempt was also made to calculate the costs per patient discharge (DSA), a measure of gross production, but which aims to combine the different final production centers of the hospital: in-patients, out-patients, and emergency ward (DGFSS, 1986).

Weights are assigned to in-patient, out-patient, and emergency cases as a function of the respective unit costs. In this case, weights were established

using information from the four hospitals referred to earlier. Thus, the equations used are as follows:

- 1 in-patient = 1 DSA
- 1 out-patient = 0.1 DSA
- patient assisted by the emergency ward = 0.1 DSA

The results are illustrated in Exhibit 3-8:

**EXHIBIT 3-8**  
**Unit Hospital Costs per "Patient Discharge"**  
**(1990)**

HOSPITAL	UNIT COST	INDEX
Inhambane	29,764	196
Tete	21,137	139
José Macamo	11,006	72
Nampula	12,874	85
Lichinga	18,677	123
Chimoio	7,934	52
Xai-Xai	10,586	70
TOTAL (average)	15,191	100

Source: DAF and DNPC

The values calculated show great variation between the hospitals for which data were available. The highest cost is found in Inhambane, with a value almost double the national average. In Chimoio, however, the average cost is around half the national average. Between the maximum and minimum found, the conclusion is that in Inhambane the costs are four times higher than those in Chimoio, both being Level III Provincial Hospitals.

Despite its great limitations, if this type of analysis is done regularly, it allows for drawing some conclusions about service efficiency.

### 3.2.7. Analysis of Present Financial Information System of DAF

Introduced by the DAF in 1989, there are a set of 13 tables which, if correctly and promptly completed by the appropriate bodies, constitutes a rudimentary FIS.

The present system aims to produce information on:

- Provincial budget distribution by entity;
- Budget implementation;
- Staff increases and decreases;
- Budget control (salaries, material, and investments);
- Revenues generated by cost recovery;
- Donations;
- Spending by level of the health care system, and
- Spending on foreign technical assistance.

However, the information resulting from this process is far from corresponding to what was intended. As shown earlier, the present FIS of the DAF does not obtain the intended information within a useful period of time (MOH, DAF, 1992). In fact, the DPSs do not fulfill the task of completing and regularly sending the forms to the central level MOH. Shortage of skilled human resources who are aware of the importance of these matters and the weak public accounting system help explain this fact. It is worth remembering that the process starts to fail in the link between the DDS and DPS, since in many cases their account registers are highly deficient.

Faced with this situation, and since central level knowledge of the financial state of the SNS is essential, this system will have to be revised and made workable.

### **3.3. PROJECTS ONGOING**

#### **3.3.1. Pilot Project for Integrated Budgeting and Management of Health Ministry and Donor Funds**

Ongoing in Zambezia Province is a pilot project whose goals are joint management of GOM budget and donor funds; greater efficiency at DPS level; and increased clarity in DPS (donor agency) and DPF relations (Report of Joint Committee, 1992). For this purpose, the project must promote the restructuring of the RAF/DPS and strengthen their management and accounting capacities. The circulation of donor funds via the DPF also requires that its capabilities must be strengthened; the donor agencies themselves must improve information flows to the DPSs, giving them part of the responsibility for management of the funds and providing the DDSs with incentives to take a more active role in the budgeting and management processes.

It should be noted that the GOM budget only finances 26.4 percent of recurrent spending on materials, while donors finance the remaining 73.6 percent (Exhibit 3-9).

**EXHIBIT 3-9**  
Sources of Funding for the Operational Budget  
of Zambezia Province (Second Semester, 1992)

SOURCE	VALUE	(%)
Government Budget	987	26.4
Donors	2751	73.6
<b>TOTAL</b>	<b>3738</b>	<b>100.0</b>

Source: Report of the Joint MOH/Swiss co-operation/UNICEF Committee, Zambezia Province 1992

In Exhibit 3-10, the amounts are separated by services.

**EXHIBIT 3-10**  
Recurrent Budget (excluding salaries) of Zambezia Province  
(Second Semester, 1992)  
(Million of MT)

Institutions	OGE	OGE (%)	Donors	Total (%)	% Total
DPS	120.3	33.9	1173.2	1293.5	41.7%
HP QUELIMANE	100.0	28.2	241.7	341.7	11.0%
RURAL HOSPITALS	45.0	12.7	725.2	770.2	24.8%
INDEPENDENT INSTITUT. (a)	40.0	11.3	47.7	87.7	2.8%
DDS	44.0	12.4	459.5	503.5	16.2%
OTHERS	5.0	1.4	103.2	108.2	3.5%
<b>TOTAL</b>	<b>354.3</b>	<b>100.0</b>	<b>2750.5</b>	<b>3104.8</b>	<b>100.0%</b>

Source: Report of the Joint MOH/Swiss Cooperation/UNICEF Committee, July 1992

Notes: (a) ICS of Quelimane and Re-training Center

The joint analysis of all funding makes it possible to confirm that the allocation of total resources is very different from the distribution of resources from the GOM budget. In fact, the only common point is the greater

slice going to the DPS; Quelimane Provincial Hospital, which appears to receive almost a third of the GOM budget "cake," in total receives only 11 percent.

This project allows for a total view of how the Province uses its available resources, enabling a more accurate and complete evaluation of activities. This project should be closely watched by MOH authorities and donor agencies to verify conclusions reported by the project management team. If the experiment succeeds, it should be copied in other Provinces, as local management capacities allow.

### **3.3.2. National Health System Management Project**

A project is now being launched to reform management of the SNS, in an attempt to organize and benefit from the current debate involving MOH officials and donor agencies. The joint project already has the support from World Bank and UNICEF, while its promoters are trying to interest other donors.

The justification for this project is based on the fact that the most recent programs, often involving large sums of money, include a management strengthening component required by the donors. This component should be carefully followed by the central level MOH to avoid the risk of creating a multitude of different management systems in the country that are hard to coordinate (Pavignani, 1992).

### **3.3.3. Management Support for Health Project**

A project in its initial phase, financed by UNICEF, aims to revise the accounting methodology used for donations, whether in cash or in-kind. It has support from most of the relevant donors and allows for integrated management of all the available funds. Project plans call for strengthening the central level MOH, in a first phase, by using expert advisors to support and supervise provincial MOH bodies. In addition, the planned introduction of double-entry bookkeeping will doubtless be an important step towards strengthening the MOH's financial management capacity.

### **3.3.4. Management Training Project**

This project aims to review the MOH training strategy for administrative staff. It has financial support from UNDP. The first phase has already ended, defining goals to be reached by the year 2002. Its goals call for management and administration training for 70 technicians and 210 health agents (lowest level health worker) who will work in health facilities, which is in agreement with the training needs defined by the MOH. Presently, there are only 42 technicians and 49 agents in the whole MOH health system who have been trained in administration. The project also includes in-service skills training for professionals through 120 hours of seminars.

### **3.3.5. Health and Nutrition Project**

This project intends to strengthen the support and management capacities of the SNS and includes a component for institutional strengthening of the DAF, with the specific objectives of improving procedures linked to cost-recovery, expense, and income-accounting procedures and financial analysis at central level.

Though the project was initiated in 1989, the activity linked to the DAF started in December 1992.

## 4.0. CONCLUSIONS/RECOMMENDATIONS

### 4.1. DISTRIBUTION OF HEALTH RESOURCES

Various imbalances exist in the distribution of health resources in Mozambique. As in many countries, urban areas, specialized health facilities, and certain provinces receive a disproportionate amount of resources in relation to rural areas, PHC facilities, and undeserving provinces. The MOH has drawn up a plan to improve the health system, emphasizing primary and secondary health care structures. This effort should be supported by donors.

The level of Mozambique's dependency on donors for the operation of its health system is cause for concern. Measures should be taken, as the MOH itself suggests, to reduce the percentage of health costs financed by donors. Beyond raising real spending by the GOM, the possibility of consumers paying more for their treatment should be examined, including revision of the price tables (for services and medicines) and charging patients drugs they consume during hospitalization. This seems like an especially viable option to consider, given that the World Bank strongly recommends no more than a 4.5 percent increase in GOM spending on health.

The type of analysis of provincial health expenditures, beds, health personnel, bed-days per capita, and out-patient visits per capita demonstrated in Section 1.1.4 should be expanded. These aforementioned indicators, plus such others as pharmaceuticals per capita, and can be used to develop a needs quotient to rank the provinces based on current expenditures and unmet needs. Then resources should be reallocated based on these needs quotients (and possibly adjusted for specific mortality rates) so that provinces with least health services per capita (e.g., institutional births) receive a proportionally larger budget.

### 4.2. VIEW OF THE PRESENT DAF FINANCIAL INFORMATION SYSTEM

Although the way it currently operates presents serious problems, the present FIS used by the DAF need not be abandoned, but revised, at least until it is substituted by a more effective one. With small alterations and simplification, the system could produce useful information.

Suggestions for this revision are listed here:

- DAF commitment to ensure that needed information arrives on time and is of a minimum level of reliability. For this purpose it is suggested that a member of DAF personnel should be specially designated to collect, analyze, and disseminate these data.
- Concrete definition of information to be solicited from each institution: DDS, DPS, hospitals, and others (e.g., a health center should not receive a form concerning foreign exchange revenues).
- Create specific forms for each level of health service. These forms should have clear and precise instructions for completing them to avoid misinterpretation at the local level.

- The information produced should be disseminated at pre-established regular intervals, in such a way as to suit the receiver/user.

#### **4.3. CREATION OF A FINANCIAL INFORMATION SYSTEM**

In the medium term, a FIS should be installed coordinating with the present Health Information System to guarantee production of coherent and integrated information. It was not possible for this consultancy to define the whole design, implementation, operation, and evaluation methodology for a FIS. Meanwhile, some topics are listed which may serve as the basis for eventual development of a project in this field:

- Creation of a financial management unit in the DAF, which will define, collect, treat, and disseminate information, working in coordination with the Health Information System authorities.
- The introduction of General Accounting (double-entry bookkeeping) in the SNS services would permit tighter management, namely through standardization and regulation of the "accounting classification" rules and production of financial information.
- Establishing of norms as to what financial information the annual DPS reports should contain.
- Collection of data for the FIS should be done through standard forms used by all health services in the country, containing clear instructions and avoiding discrepancies.
- The production and distribution of information should obey previously established criteria, according to the needs of its users, who should also be previously identified and classified.

#### **4.4. REVISION OF THE UNIT COST CALCULATING SYSTEM**

Despite the limitations pointed out in the report, there is a considerable volume of information available about unit costs. Although somewhat out-of-date, this information should be compiled and published to make it more useful.

Since unit costs are an important indicator of the efficiency of services, effort should be made, at least where local structures allow (e.g., the central hospitals), to make regular calculations. A project to compare costs among hospitals at different levels of the health systems (rural, provincial, and central) could possibly obtain outside financial support.

#### **4.5. COORDINATION WITH DONORS**

Agreement is needed among all relevant donors to encourage greater clarity of management procedures by the donors and MOH; MOH management procedures should be readily comprehensible to donors, and, in turn, donors should provide regular and complete information on implementation of programs that they fund and manage.

There should also be encouraged greater balance in the application of external funds, reducing imbalances between MOH policies and the allocation of funds. For example, in 1991, the AIDS program had a budget six times the size of the malaria program and 3.7 times the size of the program for tuberculosis, certainly far from corresponding with the concrete needs of the Mozambican situation.

On the other hand, MOH services should systematically account for and integrate with their internal budgets all the donations they receive. The current rules for assigning monetary values to donations of goods and services at the Supply Center should be divulged to and applied by the DPS and DDSs, after being revised and perfected.

#### 4.6. MARKETING METHODOLOGY

- Coordination of the planning and budgeting processes should be strengthened, at all levels, with the objective of ensuring that activity planning is consistent with available funds.
- The attempt to budget by program, as currently happens, is a process which should be encouraged. But this should be coordinated with the process of allocating sums to the provinces (responsible for program execution), creating a "matrix" which coordinates vertical budgeting (by activity programs) with horizontal budgeting (by responsible authority for its execution).
- A methodology should be created, in accordance with donors, which allows for all investment projects to plan for future operating costs, to guarantee sustainability of the programs. This provision should include salaries for additional staff, medicines, materials for consumption, and maintenance of equipment and buildings.
- Whenever possible, operational and investment budgets should be clearly separated, ensuring that the latter do not include any recurrent budget items.

#### 4.7. TRAINING OF HUMAN RESOURCES

Once the specific human resource training needs in management and administration have been identified, the planned training and re-training activities should rapidly follow. Donors should give study grants to train top-level professionals.

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