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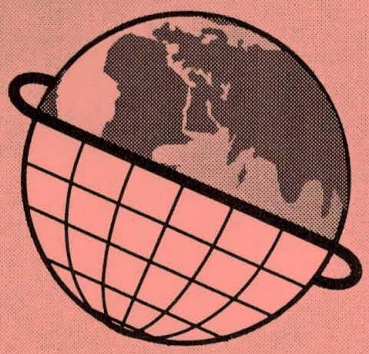

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The public health sector in Mozambique: a post-war strategy for rehabilitation and sustained development

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The public health sector in Mozambique: a post-war strategy for rehabilitation and sustained development

by

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The Project for the Revision of some Aspects of National Health Policy (PRANHP) is managed by the National Directorate of Planning and Cooperation of the Ministry of Health with the technical assistance of the Health Unit of Institute of Development Studies, University of Sussex, England.

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PREFACE

Mozambique has lived through a period of great difficulties in recent years, both economically and militarily. As a result of the war millions of people have had to flee from their homes; many have been forced to live in camps or to take shelter in neighbouring countries. They have had to survive in very poor conditions and their states of nutrition and health have deteriorated as a consequence. On top of all this, the country has experienced recently one of the most serious droughts of modern times.

The health services have not been immune to these difficulties: hundreds of rural health units have been looted, destroyed or forced to close; health workers have been targeted for attack and have had to take refuge in urban areas; urban health facilities have become overloaded as a result of the migration of rural people to the towns; the government health budget has decreased radically in real terms; and the real value of health worker salaries has fallen dramatically.

Parallel with these developments, the government has implemented an Economic and Social Recovery Programme with the support of the international community. This programme has had some positive economic impact, but it has also added to the financial and social problems of many of the poor. On the political front, the country is now moving towards a multiparty system and discussions are taking place to reach a peace agreement.

It was in this context of multiple difficulties and change that the Project for the Revision of some Aspects of National Health Policy (PRANHP) was initiated towards the end of 1989 with the financial support of the World Health Organisation. The purpose of the project was to review national health policies in the light of the current social and economic realities. In particular, the policies were to be adapted to the economic situation and were to form the basis of a realistic strategy for rehabilitation of the health system after the war.

The project has concentrated on three main areas: an economic analysis of the Mozambican health sector and the development of feasible resource projections and financing strategies for the medium term future (including the roles to be played by the government and the international donors); a review of health personnel and the health care delivery system, and the development of a strategy for the rehabilitation of the health service infrastructure; and the development of policy towards the reemergence of private medical practice in Mozambique.

The project has been managed by the National Directorate of Planning and Cooperation of the Ministry of Health with technical assistance of the Health Unit of the Institute of Development Studies, University of Sussex, England. The project has had two phases. The first was implemented by working groups of the Ministry of Health, with the support of personnel from the Ministries of Finance and Cooperation and international consultants. This phase resulted in a number of working papers, the most important of which were discussed in a national seminar and in interministerial meetings held in Maputo in November 1990. One of the most important outcomes of this phase of the project was the establishment of a set of indicative growth projections for the different levels of care of the Mozambican health service. These growth projections led to an agreement within the government, and later with the World Bank, to aim for a real growth of public health expenditure of 4.5 per cent per year in the medium term. This outcome was important because it provided a resource framework which could be used for the more detailed planning work of the second phase.

The project progressed slowly for a number of reasons, including delays in funding the second phase and the multiple demands on the time of government officials. However, another reason was the necessity, especially in the second phase, for the work of one area of the project to inform that of the others, such that the various policy and strategy formulations could become compatible with each other. The diffusion and interaction of ideas among the personnel involved in the Ministries of Health, Finance and Cooperation, the National Planning Commission, and some international agencies, inevitably took time.

The various outputs of the first project phase have now been consolidated into three documents: Revisão da Política Nacional de Sáude: Estratégias e Acções Prioritárias ('Revision of National Health Policy: Strategies and Priority Actions') by Herculano Bata, Leonardo Simão and Lucas Chomera Jeremias of the Ministry of Health; Privatização da Medicina ('Privatisation of Medicine') by Leonardo Simão, Minister of Health; and the present document. This has itself been built on two earlier works: Gastos, Financiamento e Afectação de Recursos no Sector de Saúde em Moçambique: Evolução Histórica e Perspectivas Futuras ('Expenditure, Financing and Resource Allocation in the Health Sector of Mozambique: Historical Evolution and Future Perspectives'), written by Abdul Razak Noormahomed and Malcolm Segall on behalf of a working group of the first phase; and Previsão das Consequências do Fim da Guerra no Sector da Saúde ('Prediction of the Consequences of the End of the War on the Health Sector') by Igrejas Campos, Vice-Minister of Health. The present document has also taken into account some useful reports by international consultants and staff members of the World Bank.

The three outputs of the second project phase are in the main compatible with each other, although there are still some minor discrepancies that have to be ironed out. These papers should now be debated within the Ministry of Health, with the Ministry of Finance and the National Planning Commission, and with international agencies (in particular the World Health Organisation, the World Bank and the United Nations Children's Fund). After these debates, the papers - amended as necessary - should be synthesised into a single official government document.

Abdul Razak Noormahomed and Malcolm Segall
Maputo and Brighton
August 1992

INTRODUCTION

When Mozambique became independent in 1975 it was one of the poorest countries in the world. The economy was backward, unbalanced and geared mainly to serve the needs of neighbouring countries. Large numbers of skilled settlers left the country at a time when, as a result of the colonial policy of discrimination, few Mozambicans had been trained to take their place. The vast majority of the people lived in poverty and were illiterate. Preventable communicable diseases, nutritional deficiencies, and maternity-related problems were rife, and infant and child mortality rates were extremely high, especially in the less developed provinces and the rural areas. The health sector was fragmented and biased towards urban and curative services; less than 10 per cent of the population had effective access to care.

Almost from the start, independent Mozambique suffered armed terrorist attacks and these have escalated in recent years to a state of war. This has imposed untold misery on the population. Millions of people have been displaced from their homes and large numbers live in camps in a state of destitution and poor health, dependent on international aid for survival.

Despite the difficulties of the early years - including the effects of the application of sanctions against (then) Rhodesia - the economy made some progress after independence. Then, during the first half of the 1980s, there was a marked and sustained fall in production and an aggravation of economic distortions and fiscal imbalances. Between 1980 and 1985-86, exports fell by nearly three-quarters and imports were compressed by more than a third. **Table 1** shows that in the first half of the decade, real growth of gross domestic product (GDP) was negative in most years and per person was negative in every year. This economic downturn was the result of a combination of adverse world economic events, the worsening security situation, and some inappropriate government policies. Arrears accumulated in the servicing of external debt and inflation increased.

In 1987 the government launched an Economic Recovery Programme (ERP). In some respects the economy has reacted positively, with inflation slowing and GDP growing, if more slowly in recent years (Table 1). The liberalising economic reforms have not, however, had a positive impact on the low standard of living of the mass of the people and have led to increasing hardship for some vulnerable groups. The government has now reaffirmed its commitment to poverty alleviation and has recharacterised the recovery programme as a Programme of Economic and Social Recovery. In this programme, a high priority is afforded to education, health, nutrition, water and sanitation, and to the provision of a safety

Table 1 Evolution of gross domestic product and population

Year	GDP in current prices ('000 contos)	GDP in constant prices[a] ('000 contos)	Growth rate of GDP in constant prices (%)	Population[b] ('000)	GDP per person in constant prices (Mt)	Growth rate of GDP per person in constant prices (%)
1980	78 200	78 200		12 290	6 362	
1981	81 500	78 365	0.2	12 613	6 213	-2.3
1982	92 300	75 656	-3.5	12 944	5 845	-5.9
1983	91 200	66 087	-12.7	13 284	4 975	-14.9
1984	108 800	66 749	1.0	13 633	4 896	-1.6
1985	147 000	60 494	-9.4	13 992	4 324	-11.7
1986	167 000	61 570	1.8	14 361	4 287	-0.9
1987	423 300	64 429	4.6	14 740	4 371	2.0
1988	657 400	67 913	5.4	15 129	4 489	2.7
1989	966 200	71 503	5.3	15 528	4 605	2.6
1990	1 339 900	72 505	1.4	15 938	4 549	-1.2
1991[c]	1 871 100	73 118	0.9	16 369	4 467	-1.8

Notes. (a) Base year 1980; see Table 7 for GDP deflator.
(b) Estimates made using annual population growth rate of 2.6 per cent based on 1980 population.
(c) Provisional data.

Sources. NPC: Annual Statistical Information 1985 and 1988
Statistical Yearbook 1990
Economic and Social Plan 1992.

net of transfers and services to the poorest households. The social sectors are expected to be among the main beneficiaries of a 'peace dividend' with the end of the war.

FRELIMO health policy developed during the armed struggle for national independence and has always given priority to prevention and mass basic care. On coming to power, the FRELIMO government nationalised the health sector and prohibited the practice of private medicine. It created a national health service and adopted policies of primary health care and essential drugs. In the early years after independence, these policies were pursued with considerable success and Mozambique became renowned internationally as one of the leading countries of Sub-Saharan Africa in the field of health. Preventive programmes were developed. The network of primary level health facilities was greatly expanded, especially in the rural areas: health posts increased from 326 in 1975 to 1,195 in 1985 and health centres increased from 120 in 1975 to 226 in 1990 (**Table** 2). Nearly 10,000 health workers of all types were trained or undertook refresher/upgrading courses between 1975 and 1990. New categories of health personnel were created to support the policy of primary health care; these categories included medical assistants (técnicos) and aides (agentes), mother and child health (MCH) nurses, and village health workers (agentes polivalentes elementares). **Table** 3 shows the increase in the availability of some categories of health personnel. At its peak in the first half of the 1980s, the health service reached about half of the population with preventive programmes and about a third of the people had reasonable access to fixed units and curative care.

Then, in the mid-1980s, the deteriorating military and economic situation began to have serious adverse effects on the health service.*

The war has led to the looting of equipment and material from innumerable health facilities. Some units have been partly or completely destroyed. The lack of security has made the referral of patients to higher levels of care, and the supply of drugs and materials to health units, very difficult. In some districts transport has only been possible by air. The existence of displaced populations concentrated in areas of relative security has obliged the health service to create a parallel system of care, comprising mobile teams or even special fixed units.

Except for certain projects already in progress, the expansion of the health network was virtually halted between 1985 and 1989. Investment has been focused on

* A large part of the description which follows has been extracted from the document, 'Prediction of the Consequences of the End of the War on the Health Sector', by Igrejas Campos.

Table 2 Evolution of health service network at the primary level

	1975	1980	1985	1990
Health posts	326	629	1 195[a]	996
Health centres	120	(285)[b]	221	226
Population per post or centre	21 300	13 230	9 730	12 900

Notes. (a) Includes some health centres reclassified as health posts from 1982.
(b) Includes about 74 health units designated as rural hospitals in 1975 and subsequently reclassified as health centres; from 1982 some smaller health centres were reclassified as health posts (see note (a)).

Sources. MoH: Annual Statistical Information (various).

Table 3 Evolution of some categories of health personnel

Category	1975		1980		1985		1990	
	Number	Population/ worker	Number	Population/ worker	Number	Population/ worker	Number	Population/ worker
Doctors[a]	171	63 000	301	40 000	313	44 940	387	40 600
Medical assistants and aides	0	-	171	71 640	430	32 170	435	36 200
Nurses	1 960[b]	5 795	2 156	5 700	2 535	5 475	3 547	4 400
MCH personnel[c]	430[b]	26 410	475	26 400	866	15 910	1 139	13 800
Preventive health assistants and aides	420[b]	27 040	444[d]	27 200	394	34 970	442	35 600

Notes. (a) Over half the doctors were expatriate.
(b) Data of 1977.
(c) Includes midwives, nurse midwives and MCH nurses.
(d) Data of 1979.

Sources. MoH: Annual Statistical Information (various)
Primary Health Care in Mozambique, Ministry of Health, Maputo, 1978.

the rehabilitation of existing health facilities, particularly those which were damaged by the war. Most notable has been the rehabilitation of rural hospitals, which has taken place with the support of non-government organisations and the European Economic Community.

Material shortages have been severe and have made it very difficult to keep health facilities in operation, especially for inpatient care; the feeding of inpatients has been a particular problem. Health units which did not suffer directly from the war have deteriorated for lack of maintenance.

Given the fall in the purchasing power of government salaries, many good health workers have left the public service, looking for better remunerated employment. The productivity of those who have remained has declined. Health personnel resort to 'moonlighting' to supplement their salaries and for many of them health service work is no longer their main occupation.

The training programme has changed its orientation, with a substantial reduction in basic training of all categories of health personnel, but particularly those of the elementary and basic grades. Training has focused more on the upgrading of basic level personnel and on the specialisation of middle level personnel.

The capacity of the higher levels of the health service to direct, supervise and monitor the lower levels has weakened. This applies to the Ministry of Health in relation to the provinces, to the provinces in relation to the districts, and even within districts. This weakened health management capability has resulted in a reduction in quality - and in some cases in coverage - of health programmes. Technical and administrative norms have not been complied with properly and a degree of anarchy has crept into the health services. The health information system has become unreliable in many areas, making the management and monitoring of services even more problematic.

During this difficult period, the support of the international community for the health service has increased substantially. This support has been a lifeline that has prevented the service from sinking, but it could have been of even greater assistance if it had had a more appropriate form and had fewer conditions been attached to it.

The project PRANHP was created to contribute to the process of formulating policies and strategies for the rehabilitation of the Mozambican health service after the end of the war. This document is one product of that project.

SCOPE OF THE WORK

The present work aims to create an overall resource framework for the rehabilitation and development of the public health sector in Mozambique. To do this, it has been necessary to review the evolution of health sector resources during the medium term past and to project the evolution of sectoral resources for the medium term future. The framework attempts to translate the health policy objectives of the government into a resource profile and to show how the resource projections can be financed. Aspirations for the health sector which appear to be beyond the bounds of economic feasibilty for the time being have been excluded. The framework thus defines broad resource targets and limits - for the sector as a whole and for its different components - which can be used to guide and discipline more detailed elements of the health planning process.

The resource analysis is mainly in financial terms, because money is the only common currency that can express all the different types of health resources and can be used to create an overarching resource framework. This work is thus complementary to the planning of 'real' health resources like facilities, personnel and drugs.

In this document, guidelines are given for the rehabilitation of the health service network at the primary and secondary levels, but more detailed planning of the physical facilities, their location and their modes of operation are still needed. Criteria for the development of the urban hospital services have also yet to be formulated. Apart from the definition of average staffing patterns for primary and secondary level health facilities, personnel planning has been beyond the scope of this work. Aspects of personnel policy are dealt with in the companion output of PRANHP, 'Revision of National Health Policy: Stategies and Priority Actions', and in the report entitled, 'Health Manpower Development Plan 1992-2002', by Oscar Gish and Enrico Pavignani; it should be noted that some aspects of the personnel plan now need revision for it to become compatible with the staffing patterns and resource projections of the present work. Overall drugs needs are identified, but more work is still needed to improve the processes of import, management and distribution of drugs.

This document addresses the public health sector in the strict sense of the term. It concerns the main areas of responsibilty of the Ministry of Health and omits consideration of the following:

- the health activities of the Ministry of Defence

METHODOLOGICAL NOTES

In general official data, published or supplied from a government source, were used. Many of the data were derived from statistical publications of the National Planning Commission and the Ministry of Health, and from the accounts of various departments of the Ministry of Health. The data were checked for internal consistency and plausibility and, wherever possible, cross-checked against information from other sources; where there was doubt, the most plausible data were used. Estimates were made where necessary and possible. Footnotes to the tables in this document give the sources of data and explain how any estimates were made.

It should be noted that the financial analysis is in terms of actual expenditure and not of budget estimates. This is the first time that such an analysis has been made for the health sector in Mozambique. With respect to government expenditure, most of the data were supplied by the Directorate of Administration and Finance of the Ministry of Health and by the National Budget Department of the Ministry of Finance. The figures for 1991 are provisional. On the advice of the Ministry of Finance, all government expenditure data refer to the civil year.

Since 1988 some recurrent costs of health programmes have been financed from the government investment budget. These recurrent costs were identified and counted towards total government recurrent health expenditure. Other costs of a recurrent type (e.g. salaries, operating costs) financed from the investment budget were considered to be in support of the investment projects and as such were counted as investment expenditure.

Since 1987 user fees charged for outpatient and inpatient care have no longer had to be transferred to the government and could, in principle, be used by the health facilities which collected them. User fees from 1987 onwards were therefore considered to be a resource for health expenditure over and above the financial allocations from the government. By contrast, fees collected for drugs continue to be paid over to the government and were not considered to be an additional resource for the health sector.

Since 1990 almost all central and provincial hospitals have provided 'special' outpatient clinics and inpatient care of better than routine quality and at prices considerably above the 'normal' charges for the routine services. A high proportion (that varies from hospital to hospital) of the 'special' fee income has been paid to the health professionals providing the care. Nevertheless, the 'special' fees were considered to be additional revenue for the public health service, since

they are an indirect form of support to the hospital salary fund and some of the fee money is used to supplement the hospitals' operating budgets.

Included under expenditures on 'drugs' are relatively small amounts spent on related products like chemical reagents, X-ray film, dressings and other consumable medical items. The expenditures include the costs of insurance, transport, customs and storage. Most drugs are imported for use by the national health service, but some go to supply state and private retail pharmacies and other outlets licensed to sell drugs to the public; from 1987 onwards, the relatively small expenditures made by the government on drugs were for the national health service only.

With respect to international aid, different sources of data often give different values for the assistance provided. In this work, only aid actually received was counted; items which appeared only in project budgets were excluded. For drugs (and related products) data from the importing agency MEDIMOC were used. For other consumable items and equipment, data from the Directorate of Supplies of the Ministry of Health were used; almost all donors imported their products through this directorate since they would otherwise have to pay import tax and customs and storage costs. Data on technical assistance were supplied by the Directorate of Human Resources of the Ministry of Health. Estimates of the monetary value of this assistance were made using the methods of the Ministry of Cooperation. Expatriate personnel were classified into grades according to national educational criteria.

The World Bank 'soft loan' for the health sector was considered as aid. The Swiss Government support to the recurrent health budget, which began in 1990, was included in the aid category entitled 'other consumable items'. The aid data presented exclude certain administrative costs paid directly by donors (e.g. for consultancies, project preparation, salaries of project managers) and may not include all assistance given by non-government organisations.

Investment costs were defined as those of construction, equipment and other products with a durability of more than a year. Included in the definition of investment expenditure were the costs of technical assistance and other services and goods used in support of investment projects. In 1991 a part of the investment health expenditure was financed through the National Executive Emergency Committee, an institution created by the government to coordinate intersectoral activities of government and donor bodies under the Emergency Programme.

Many of the financial data are presented in both current and constant prices. Various indices were used for

deflation. Those relating to the national economy were obtained from official publications of the National Planning Commission. For imported products and foreign technical assistance, price indices were obtained from the International Financial Statistics Yearbook 1991 of the International Monetary Fund. The use of the various indices is explained in the tables and text and the indices are given in Table 7.

Estimates were made of the distribution of recurrent health resources (financed from internal and external sources) by level of health care and geographical area. The primary level of care comprises health posts and centres, the secondary level rural and general hospitals, the tertiary level provincial hospitals, and the quaternary level central and specialised hospitals. The division by level of care of salary costs and the costs of 'other operating items' (i.e. excluding drugs and related products) was estimated by combining information from the following sources of the Ministry of Health: studies made by the National Directorate of Planning and Cooperation on expenditures by level of care; information on salary costs and user fees from the Directorate of Administration and Finance and the Central Hospitals of Maputo and Beira; various numbers of 'Annual Statistical Information'; data from the Directorate of Human Resources on the location of technical assistance personnel; a study of training costs made by the Directorate of Human Resources; and data provided by the Directorate of Supplies. With regard to drugs and related products, the proportional division of expenditures by level of care was obtained for 1990 from data of the Social Fund for Drugs and Food Supplements (see Modelo da Circulação de Medicamentos na República de Moçambique by Joaquim Durão). To estimate the division of drug costs by level for 1991, the proportional division for 1990 was applied to the total drugs imported by MEDIMOC for the national health service in 1991. Data for drugs supplied to the provinces were obtained from the annual reports of the Pharmaceutical Department of the Ministry of Health. Data on the location of health personnel were supplied by the Directorate of Human Resources. Estimates of the populations of cities and provinces were taken from various numbers of 'Annual Statistical Information' of the Ministry of Health.

The above sources of information also allowed an estimate to be made of the division of total recurrent health expenditure into certain sectoral components for the year 1991 (Table 31A). In the absence of a financial information system designed for planning purposes, this was the greatest level of expenditure disaggregation that could be achieved. Despite its inadequacies, it was sufficient to act as a basis for future projections of recurrent health expenditure by sectoral components and to examine the broad economic implications and feasibilty of the rehabilitation policies and strategies.

Norms for the staffing and recurrent costs of rehabilitated health facilities at the primary and secondary levels were defined. The unit running costs of rehabilitated facilities were estimated in 1991 prices from the following: average salaries of the defined staff; estimated drug costs based on data from the essential drugs programme, combined with information on actual drug expenditures of selected hospitals and estimates of future increases in drug consumption based on urban and rural population growth rates and possible increases in health facility utilisation; and the costs of 'other operating items', which were calculated as half of salary costs as these would have been if salaries had the same real value as in the beginning of the 1980s (a time at which this ratio of non-drug operating costs to salaries was empirically satisfactory). Norms for the recurrent costs of central and provincial hospitals and of training institutions could not be defined at the time.

For the estimation of unit investment costs for the rehabilitation or construction of various types of health facility, the following sources of information were used: studies by the Office for the Coordination of Investment Projects of the National Directorate of Planning and Cooperation, made with the support of the Danish Hospital Institute, and the documents, 'Mozambique: Health Sector Emergency Requirements 1992-93' (second draft), 'Project Proposal for Integrated Health Care Project 1992-2003 for Manica Province, Mozambique' (WHO-ICO 1991), and 'The Structure of Health Sector Expenditure' (SvJ/25.7.91/WB).

The list of health centres to be upgraded to rural hospitals (Table 26) was based on the document, Reclassificação da Rede Sanitária, produced by the National Directorates of Health and of Planning and Cooperation.

For the estimate of the size of a social security health fund, the number of salaried employees in the public and private sectors was based on the estimate of 477,000 made by the National Institute of Social Security for the year 1989 and average salary levels were taken from the Economic and Social Plan for 1992 published by the National Planning Commission.

Estimates of the rural, urban and total population in the year 2000 were taken from projections of the National Planning Commission.

The unit of national currency is the metical (Mt). One conto is Mt 1,000.

The health expenditure as a proportion of GDP followed a similar course. It reached a maximum of 2.3 per cent in 1981 and 1983. From 1984 it decreased to reach its lowest level of 1.0 per cent in 1987, since when it has increased gradually to attain 1.5 per cent in 1991.

Table 5 shows government health expenditure from the recurrent budget broken down into the main categories of its use, namely, salaries, drugs (and related products), and 'other operating items'.

Salary costs as a percentage of the recurrent health expenditure increased from 50-55 per cent at the beginning of the 1980s to reach a maximum of 73 per cent in 1985. This change in percentage reflects mainly the fall in expenditure on drugs and other operating items in the middle of the decade, as well as a slight increase in the salary costs as such. The proportion of recurrent health expenditure devoted to drugs fell drastically from more than 20 per cent at the beginning of the decade to little more than zero in recent years. Salary costs as proportion of total recurrent costs have fallen again in recent years to 50-57 per cent, but this has reflected in part the increase of price in national currency of drugs and other imported products.

Changes in the availability of the different elements of health resources will be analysed in more detail when, in later tables, expenditure is shown in constant prices and when international aid, especially for the provision of drugs, is taken into account. Nevertheless, it is useful to draw attention at this point to the trend towards an imbalance between the availability of health personnel and that of drugs and other operating inputs (both goods and services). This imbalance is a common consequence of health budget constraints, when the first priority for the use of limited funds is to pay the health workers, leaving little money to meet operating expenses. The result is that health personnel receive their salaries but lack the materials and conditions with which to work; both the quality and efficiency of the health services fall.

Since 1988 some recurrent expenditure for health programmes has been financed from the investment budget. **Table 6** shows the expenditures from this source. It can be seen that the values are very small compared with those that come through the normal channels of the government recurrent budget.

In 1987 the government, in the context of the ERP, considerably increased outpatient user fees and introduced fees for inpatient care. At the same time the fees no longer had to be transferred to the government and could, in principle, be utilised by the health units which collected them. From that year, therefore, the user fees have been considered to be a resource for health expenditure over and above the financial allocation from the government budget. (In practice the

Table 5 **Evolution of expenditure from government recurrent health budget by main categories of use**

(Current prices: '000 contos)

Year	Salaries		Drugs		Other operating items		Total
	Expenditure	%total	Expenditure	%total	Expenditure	%total	
1980	815	55	310	21	355	24	1 480
1981	930	50	475	26	445	24	1 850
1982	1 080	53	420	21	520	26	2 020
1983	1 100	52	355	17	665	31	2 120
1984	1 185	69	210	12	325	19	1 720
1985	1 320	73	250	14	230	13	1 800
1986	1 250	62	160	8	600	30	2 010
1987	2 460	55	930	21	1 070	24	4 460
1988	4 485	56	875	11	2 690	33	8 050
1989	6 580	50	1 105	8	5 765	42	13 450
1990	9 640	54	595	3	7 595	43	17 830
1991[a]	15 480	57	605	2	11 275	41	27 360

Note. (a) Provisional data.

Sources. MoH: DAF, DPh, NDPC and MEDIMOC
Bloom, G., 'Expenditure and financing of the health sector in Mozambique', 1987
Durão, J.R. and Pereira, R.A., Recuperação de Custos na Saúde em Moçambique, 1989
MoF: State Budget 1991.

Table 6 Evolution of total recurrent health expenditure of internal origin

(Current prices: '000 contos)

Year	From recurrent budget[a]	From investment budget[b]	'Normal' user fees[c]	'Special' user fees[c]	Total Expenditure	Total % GDP
1980	1 480	-	-	-	1 480	1.9
1981	1 850	-	-	-	1 850	2.3
1982	2 020	-	-	-	2 020	2.2
1983	2 120	-	-	-	2 120	2.3
1984	1 720	-	-	-	1 720	1.6
1985	1 800	-	-	-	1 800	1.2
1986	2 010	-	-	-	2 010	1.2
1987	4 460	-	195	-	4 655	1.1
1988	8 050	39	215	-	8 304	1.3
1989	13 450	285[d]	215	-	13 950	1.4
1990	17 830	576[d]	226	300[e]	18 932	1.4
1991[f]	27 360	500	216	683[e]	28 759	1.5

Notes. (a) See Table 4.
(b) Recurrent expenditure included in the investment budget for the operation of health programmes.
(c) Estimates; see text for explanation.
(d) Estimate.
(e) Data only from the Central Hospital of Maputo in 1990 and the Central Hospitals of Maputo and Beira in 1991.
(f) Provisional data.

Sources. Table 4
MoH: NDPC, DAF, Central Hospitals of Maputo and Beira
NPC: Statistical Yearbook 1990
MoF: State Budget 1991.

fee money is held by the provincial offices of the Ministry of Finance and it may not always be spent by the health units. Nevertheless, in this work, use of the money by the health facilities is assumed.) By contrast, the fees collected for drugs continue to be paid over to the government and are not considered to be an additional resource for the health sector.

The collection of user fees has been very incomplete in the health service and the fee rates have not been increased since 1987. Table 6 shows estimates of the fee revenue collected. It can be seen that the amounts of money generated have been extremely small compared with government expenditure and that with inflation the proportional contribution of fees has diminished greatly over the years. This then is the situation with respect to fees charged to the general public for the 'normal' service of health facilities.

Since 1990 almost all the central and provincial hospitals have been providing 'special' outpatient clinics and inpatient care of better than routine quality and at prices considerably above the 'normal' charges for routine services. Although a high proportion (that varies from hospital to hospital) of the 'special' fee income has been paid to the health personnel directly involved in providing the services, the fees are considered to be additional revenue for the public health service, because they are an indirect form of support to the hospital salary fund and some of the fee money is used to supplement the hospitals' operating budgets. Table 6 shows that the amount of 'special' fee revenue collected has been relatively high, especially as the data refer only to the Central Hospitals of Maputo and Beira.

The final column of Table 6 shows total recurrent health expenditure of 'internal origin', that is to say, expenditure financed from within the country, either by the government or by user fees. It is clear that, despite the existence of the other sources of finance, the vast bulk of national recurrent health expenditure is financed through the normal channel of the government recurrent budget.

Real Expenditure and Resources

Table 7 shows the five indices that have been used for the deflation of nominal expenditure. Their use is explained in the text and notes to the tables which follow.

The evolution of recurrent health expenditure of internal origin is shown in constant prices (base year 1980) in **Table 8.** It is clear that, in real terms, the health sector suffered serious expenditure cuts during the course of the 1980s. In prices of 1980, the recurrent expenditure was over Mt 1,500 million at the beginning of the decade and it decreased to about a half of this

Table 7 Indices of exchange rate and deflators
(Base year 1980)

	Exchange rate (Mt = $1)		International products
	Rate	Index	
1980	32.04	100	100
1981	35.35	111	110
1982	37.37	118	118
1983	40.18	124	125
1984	42.44	131	130
1985	43.18	133	136
1986	40.43	125	139
1987	289.44	893	143
1988	528.58	1 631	147
1989	747.06	2 305	153
1990	929.09	2 867	161
1991[a]	1 391.45	4 294	168

	Public consumption items[b]	Private consumption items[b]	Gross domestic product[b]
1980	100	100	100
1981	104	104	104
1982	122	122	122
1983	138	137	138
1984	163	157	163
1985	243	232	243
1986	248	261	271
1987	616	719	657
1988	978	1 114	968
1989	1 478	1 559	1 351
1990	2 034	2 134	1 848
1991[a]	2 842	3 035	2 559

Notes. (a) Provisional indices.
(b) Deflators are more reliable from 1987.

Sources. NPC: Annual Statistical Information 1975-84 and 1988
Annual Economic Information 1989
Statistical Yearbook 1990
Economic and Social Plan 1992
IMF: International Financial Statistics Yearbook 1991.

Table 8 **Evolution of recurrent health expenditure of internal origin in constant prices[a]**

(Base year 1980: '000 contos)

Year	Current prices	Constant prices	
		Expenditure	Per person (Mt)
1980	1 480	1 480	120
1981	1 850	1 779	141
1982	2 020	1 656	128
1983	2 120	1 536	116
1984	1 720	1 055	77
1985	1 800	741	53
1986	2 010	811	57
1987	4 655	756	51
1988	8 304	849	56
1989	13 950	944	61
1990	18 932	931	58
1991[b]	28 759	1 012	62

Notes: (a) Deflation with public consumption index (Table 7).
(b) Provisional data.
Source: Table 6.

value in 1985-87. Then, over the next few years, during the course of the ERP, it increased gradually to around Mt 1,000 million at the beginning of the 1990s.

In terms of recurrent health costs per person, national expenditure fell in 1980 prices from a maximum of Mt 141 in 1981 to a minimum of Mt 51 in 1987, increasing gradually after that to reach Mt 62 in 1991.

The trends in recurrent health expenditure shown in Table 8 are expressed in terms of the general prices of the economy. However these values do not represent the 'real' health resources that could be acquired with these expenditures. This is because, on the one hand, health worker salaries did not keep up with the general price inflation and, on the other hand, the prices in national currency of drugs and other imported products were subject to a rate of inflation greater than that of the national economy in general. These differential price effects are shown in the following tables, which refer only to health expenditure from the government recurrent budget.

Tables 9A and 9B show the evolution of the availability of health personnel, drugs and other operating items (that is, the changing availability of 'real' health service inputs) financed from the government recurrent budget.

Table 9A shows that the number of health workers increased from a little over 12,000 in 1980 to nearly 17,000 in recent years. This was despite a dramatic decrease in real total salary costs between 1981 and 1987 (since when there has been a gradual rise). A reduced salary fund supporting a rising number of personnel was possible only by virtue of a fall in health worker real salaries from an average of - in 1980 prices - 66.5 contos in 1980 to 21.1 contos in 1988, after which there was a gradual increase to 30.5 contos in 1991.

Thus although the number of health personnel increased during this period, it is likely that their motivation and productivity fell as a consequence of the serious reduction in their purchasing power, as well as of a lack of drugs and other operating inputs with which they could work (see below).

Table 9B indicates the availability of operating inputs necessary for the proper functioning of the health services financed from the government recurrent budget.

Since drugs are almost entirely imported to Mozambique, changes in the volume of government imports have been estimated by deflating current expenditures using the product of the international price and exchange rate indices (Table 7). In line with the budgetary constraints of the mid-1980s, government expenditure on drugs decreased in 1980 prices from Mt 310 million in 1980 to Mt 92 million in 1986. Then with the massive and

Table 9A Evolution of 'real' health resources[a] financed by government recurrent budget

(Base year 1980)

A: Health personnel

Year	Number of health workers	Total salary costs ('000 contos)		Average annual salary[b] in constant prices[c] (contos)
		Current prices	Constant prices[c]	
1980	12 261	815	815	66.5
1981	12 830	930	894	69.7
1982	13 669	1 080	885	64.8
1983	14 513	1 100	803	55.3
1984	14 691	1 185	755	51.4
1985	15 321	1 320	569	37.1
1986	15 171	1 250	479	31.2
1987	16 208	2 460	342	31.6
1988	15 874	4 485	403	21.1
1989	16 852	6 580	422	25.0
1990	16 096	9 640	452	28.1
1991[d]	16 740	15 480	510	30.5

Notes. (a) This means the availability of actual health personnel, drugs, and other medical and non-medical operating items necessary for the functioning of the health service.
(b) Crude estimate made by the simple division of the total salary costs by the total number of health workers. This does not take into account changes in the relative weight of the different categories of health personnel. Such changes were not however substantial.
(c) Deflation with private consumption index (Table 7).
(d) Provisional data.

Sources. MoH: Annual Statistical Information (various)
Table 5.

Table 9B Evolution of 'real' health resources[a] financed by government recurrent budget

(Base year 1980: '000 contos)

B. Drugs and other operating items

Year	Drugs		Other operating items	
	Current prices	Constant prices[b]	Current prices	Constant prices[c]
1980	310	310	355	355
1981	475	389	445	429
1982	420	302	520	435
1983	355	229	665	486
1984	210	123	325	207
1985	250	138	230	99
1986	160	92	600	230
1987	930	73	1 070	149
1988	875	37	2 690	242
1989	1 105	31	5 765	370
1990	595	13	7 595	356
1991[d]	605	8	11 275	372

Notes: (a) See note (a) in Table 9A.
(b) Deflation using the product of the exchange rate and international price indices (Table 7).
(c) Deflation with private consumption index (Table 7), which is appropriate for the products and services bought locally for the health service.
(d) Provisional data.

Source: Table 5.

progressive devaluation of the metical from 1987 (Table 7), drug prices in national currency increased enormously and government imports plummeted in 1980 prices to less than Mt 10 million in 1991. The effects of this reduction on the health service will be discussed later when the provision of drugs through international aid is taken into account.

By contrast, real expenditure on 'other operating items' also suffered a big reduction in the middle of the 1980s, but afterwards made a reasonable recovery. This can be explained partly by the fact that, given the lack of foreign exchange and an increase in drug imports through aid, there was a shift towards the end of the 1980s in the use of the government budget away from drugs to the local purchase of items for general operating purposes (see Table 5).

RECURRENT HEALTH RESOURCES FINANCED BY INTERNATIONAL AID

The evolution of recurrent health expenditure financed by foreign assistance is shown in current US dollars and the equivalent in local currency in **Table 10.** Aid expenditure increased rapidly from 1986-87, particularly for drugs and 'other consumable items'; technical assistance costs also increased but more gradually. In total the assistance increased from over $5 million in 1983 to nearly $33 million in the early 1990s. Although it is not shown in the table, between 1983 and 1989 the proportion of total expenditure on imported products and technical assistance financed by aid increased from 39 to 93 per cent. In recent years, aid for recurrent costs has been about 50 per cent for drugs, 40 per cent for technical assistance and 10 per cent for 'other consumable items'.

Table 11 shows the number and broad categories of expatriate health personnel employed through international aid since 1986. It should be noted that the great expenditure on technical assistance has resulted in the employment of only some 350-400 health workers per year. About three-quarters of the recruitment has been at the higher level.

TOTAL RECURRENT HEALTH EXPENDITURE

In **Table 12** an attempt is made to estimate total recurrent health expenditures, financed both from internal sources and by international aid. This estimate gives a broad idea of the total volume of health care activities in the country. The table shows national and international expenditures in local currency at current prices and their respective proportions of the total.

Table 10 Evolution of recurrent health expenditure financed by international aid:[a] imported products and technical assistance

(Current prices)[b]

Year	Drugs[c]			Other consumable items[d]			Technical assistance[e]			Total	
	$'000		'000	$'000		'000	$'000		'000	$'000	'000 contos
	Expenditure	%total	contos	Expenditure	%total	contos	Expenditure	%total	contos		
1980	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA
1981	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA
1982	-	-	-	NA	NA	NA	NA	NA	NA	NA	NA
1983	1 000	18	40	747	14	30	3 783	68	152	5 530	222
1984	1 296	NA	55	NA	NA	NA	NA	NA	NA	NA	NA
1985	926	NA	40	NA	NA	NA	NA	NA	NA	NA	NA
1986	8 781	57	355	742	5	30	5 936	38	240	15 459	625
1987	9 639	51	2 790	1 728	9	500	7 487	40	2 167	18 854	5 457
1988[f]	15 438	50	8 160	6 395	21	3 380	8 829	29	4 667	30 662	16 207
1989	10 727	45	8 095	1 740	7	1 300	11 603	48	8 669	24 070	18 064
1990	16 981	51	15 777	3 875	12	3 600	12 048	37	11 194	32 904	30 571
1991[g]	16 169	49	22 498	3 285	10	4 571	13 490	41	18 771	32 944	45 840

Notes. (a) This table includes almost all aid actually received by the Ministry of Health. The expenditure is shown in US dollars and the equivalent in local currency.
(b) For calculation of value of aid in local currency, official exchange rates were used (see Table 7).
(c) Aid for drug purchases was insignificant in the early years of the 1980s.
(d) Excludes equipment which is considered as investment. The data for 1983 are estimates. For the years 1990 and 1991, the figures include provisional data for the budget support of the Swiss Government.
(e) Excludes expatriate health personnel paid by the Ministry of Health; the figures are estimates.
(f) The high values for imported products in 1988 appear to be due to delays in the arrival of some aid agreed in previous years and/or to misattribution in accounting.
(g) Provisional data.

Sources. MoH: DPh, DS, DHR, NDPC and MEDIMOC.

Table 11 **Evolution of numbers of expatriate health personnel employed through technical assistance[a]**

Year	Higher level	Middle level	Basic level	Total
1986	301	64	42	407
1987	292	54	41	387
1988	306	60	30	396
1989	272	63	14	349
1990	270	68	15	353
1991[b]	260	99	31	390

Notes. (a) Includes personnel paid totally or partly from international aid.
(b) Provisional data.
Source. MoH: DHR.

Table 12 Evolution of total recurrent health expenditure[a]

(Current prices: '000 contos)

Year	Internal origin		International aid		Total	
	Expenditure	%total	Expenditure	%total	Expenditure	%GDP
1980	1 480	NA	NA	NA	NA	NA
1981	1 850	NA	NA	NA	NA	NA
1982	2 020	NA	NA	NA	NA	NA
1983	2 120	91	222	9	2 342	2.5
1984	1 720	NA	NA	NA	NA	NA
1985	1 800	NA	NA	NA	NA	NA
1986	2 010	76	625	24	2 635	1.6
1987	4 655	46	5 457	54	10 112	2.4
1988	8 304	34	16 207	66	24 472	3.7
1989	13 950	43	18 064	57	31 729	3.3
1990	18 932	38	30 571	62	49 503	3.7
1991[b]	28 759	39	45 840	61	74 599	4.0

Notes. (a) Includes expenditure financed from internal sources and through international aid.
(b) Provisional data.

Sources: Tables 6 and 10.

Since the mid-1980s, and especially from 1987, the contribution of aid has increased greatly, from 9 per cent of total recurrent health expenditure in 1983 to 57-66 per cent in recent years.

The table also shows that total recurrent health expenditure in relation to GDP fell from 2.5 per cent in 1983 to 1.6 per cent in 1986 and then, largely as a result of the increase in aid, rose to 4.0 per cent in 1991 (compare with Table 6 for internally financed expenditure only).

However, a better idea of the changing availability of health resources is given by **Table 13**, which shows the evolution of total recurrent health expenditure in constant prices. Real expenditures financed from internal sources have been shown already in Table 8. To arrive at an estimate of the real value of international aid during the last several years, it was necessary to use a realistic exchange rate. The rate for 1991 was chosen; this was the last year of the present time series and by then the metical was effectively floating. The aid expenditures in US dollars for the years under study were inflated to 1991 prices using the international price index (Table 7) and then converted to national currency using the 1991 exchange rate. For the purposes of comparability with other constant price time series in this work, the aid expenditures in 1991 metical prices were deflated to the prices of 1980 using the public consumption index (Table 7). The aid expenditures in prices of both 1991 and 1980 are shown in Table 13, together with the expenditures of internal origin and the total recurrent health expenditures from all sources.

The table shows that, in 1980 prices, total recurrent health expenditure per person was Mt 143 in 1983, compared with Mt 144-170 between 1988 and 1991.

It is also possible to make a comparison between these years in a slightly different way. Total recurrent health expenditure in relation to GDP was, in 1980 prices, 2.9 per cent in 1983 compared with 3.6 per cent in 1991, a year in which the real GDP was greater (see Table 1).

The Mozambican health services need more funds to improve the quality and coverage of care and all efforts should be made to increase the available health resources. Nevertheless, contrary to what has been commonly thought, recurrent health expenditures in real terms have not been lower in recent years than at the beginning of the 1980s and probably they have been somewhat higher. It is useful to remember that 1983 was one of the better years of the Mozambican health service: in 1991 prices, recurrent health expenditure per person was equivalent to $2.9 in 1983 compared with $3.2 in 1991.

Table 13 Evolution of total recurrent health expenditure in constant prices

('000 contos)

Year	Internal origin Prices of 1980		International aid Prices of 1991	International aid Prices of 1980		Total Prices of 1980	
	Expenditure	% total	Expenditure[a]	Expenditure[b]	% total	Expenditure	Per person (Mt)
1980	1 480	NA	NA	NA	NA	NA	NA
1981	1 779	NA	NA	NA	NA	NA	NA
1982	1 656	NA	NA	NA	NA	NA	NA
1983	1 536	81	10 338	364	19	1 900	143
1984	1 055	NA	NA	NA	NA	NA	NA
1985	741	NA	NA	NA	NA	NA	NA
1986	811	47	25 998	916	53	1 727	120
1987	756	41	30 821	1 084	59	1 840	125
1988	849	33	48 758	1 716	67	2 565	170
1989	944	42	36 776	1 294	58	2 238	144
1990	931	36	47 775	1 681	64	2 612	164
1991[c]	1 012	39	45 840	1 613	61	2 625	160

Notes: (a) To use a realistic exchange rate, the aid expenditures in current US dollars were inflated to 1991 prices (using the international price index) and converted to local currency using the exchange rate of that year (Table 7).
(b) For comparability with the other time series of expenditures in constant prices in this work, the aid expenditures in 1991 prices were deflated to 1980 prices using the public consumption index (Table 7).
(c) Provisional data.

Sources: Tables 8 and 10.

It seems that the current impression of an acute lack of health resources is related, not so much to absolute shortage, but to problems in:

- the composition of resources
- the distribution of resources
- efficiency in the use of resources
- external dependency.

To begin to address these problems, an analysis follows of how the total recurrent expenditures are translated into the availability of 'real' health resources, that is, the availability of drugs, of other operating items, and of health personnel.

AVAILABILITY OF REAL HEALTH RESOURCES

Drugs

From the data presented in Tables 5 and 10, it can be calculated that the total expenditure on the import of drugs (and related products) in 1991 amounted to $16.6 million, which represented an average value of $1.0 per person. To put this level of drug provision in perspective, **Table 14** shows the evolution of the availability of drugs since 1980. The table shows government and aid expenditures on drugs in constant prices (base year 1980) in US dollars and the equivalent in local currency.

As was already seen in Table 9B, government expenditure on drugs fell markedly in real terms from the middle of the 1980s to reach very low values in the early years of the 1990s. By way of compensation, aid in drugs became significant in the middle of the 1980s and increased greatly from 1986. In 1985 international assistance financed only 14 per cent of the cost of drug imports, while by 1990 that proportion had risen to 97 per cent.

With respect to total availability, expenditure on drugs fell in 1980 prices from some $10 million per year at the beginning of the 1980s to less than $5 million per year in the middle of the decade. Then with the increase in international support, total drug expenditure rose such that in 1991 it was again some $10 million in 1980 prices. However, because of the increase in population, this value represented a drug expenditure per person (in 1980 prices) of $0.62 compared with $0.78 per person in 1980. Thus the availability of drugs per person in 1991 was about four-fifths of that at the beginning of the 1980s. The recent situation has therefore been much better than in mid-decade, but it is still necessary to import more drugs only to reach the level of drug

Table 14 Evolution of availability of drugs

(Drug expenditure in constant prices:[a] base year 1980)

Year	Government			International aid			Total			
	$'000		'000	$'000		'000	$'000	'000	Per person	
	Expenditure	%total	contos	Expenditure	%total	contos		contos	$	Mt
1980	9 640	100[b]	310	-		-	9 640	310	0.78	25
1981	10 773	100[b]	389	-		-	10 733	389	0.85	31
1982	7 390	100[b]	302	-		-	7 390	302	0.57	23
1983	5 376	87	229	800	13	26	6 176	255	0.46	19
1984	3 488	78	123	997	22	32	4 485	155	0.33	11
1985	4 253	86	138	681	14	22	4 934	160	0.35	11
1986	1 964	24	92	6 317	76	204	8 281	296	0.58	21
1987	1 937	22	73	6 741	78	219	8 678	292	0.59	20
1988	933	8	37	10 502	92	340	11 435	377	0.76	25
1989	956	12	31	7 011	88	230	7 967	261	0.51	17
1990	344	3	13	10 547	97	342	10 891	355	0.68	22
1991[c]	509	5	8	9 624	95	312	10 133	320	0.62	20

Notes. (a) Expenditure is shown in US dollars and the equivalent in local currency. Dollar costs were deflated using the international price index; costs in local currency were deflated using the product of the exchange rate and international price indices (Table 7).
(b) Aid for drug purchases was insignificant in the early years of the 1980s.
(c) Provisional data.

Sources: Tables 5 and 10.

provision per person that prevailed more than a decade ago.

Other Operating Items

Expenditure on 'other operating items' (that is, on items other than salaries and drugs) is presented in Tables 5, 9B and 10.

In the early years of the 1980s, when prices were fairly stable, about half the recurrent health expenditure was devoted to salary costs and the other half was shared about equally between drugs and other operating items (Table 5). At this time the health services were functioning relatively well. Also these proportions were similar to those found in the health services of a number of African countries before the advent of the economic crisis of the 1980s. Although these are crude criteria for appraisal, it seems that the Mozambican health service began the 1980s with a reasonable balance in the use of recurrent resources.

From this base, real government expenditure on 'other operating items' was relatively well maintained in many of the years under study, including in recent years (Table 9B). In addition, as Table 10 shows, there has been external support for 'other consumable items'.

The Mozambican health service doubtless needs more operating funds to improve the quality and efficiency of care. But the total funds available for general operating inputs do not appear to be one of the main limiting factors in the functioning of the health care system. This global assessment does not of course exclude problems in the distribution and use of these inputs.

Health Personnel

Issues in the distribution, management and training of health personnel are addressed later in this document and in more detail elsewhere (see 'Scope of the Work'). At this point, however, it is useful to draw attention again to Table 9A, which shows the increase in the total number of health workers during the 1980s, despite the economic difficulties that the country was experiencing. For at least some personnel categories, this increase in numbers represented an improvement in population to health personnel ratios (see Table 23). On the other hand, it is necessary to emphasise again that health workers suffered a great fall in their purchasing power during the 1980s, even though in recent years there has been a slight improvement (Table 9A). As has been mentioned already, this fall in real salaries has resulted in the practice of 'moonlighting' and a loss of quality and productivity in health work. Hence the approach at this point in time to increasing the effective availability of health personnel should be, not so much to increase their numbers, but to remotivate health workers by improving

their living standards and to promote increased service outputs from salary inputs.

In addition to the thousands of national health workers, the country has benefited each year from the support of about 400 expatriate health personnel (see Table 11). Many of these foreign workers have filled important staffing vacancies in the health service, especially of doctors and other specialised personnel, and have ensured the functioning of many of the country's hospitals. Nevertheless, it is appropriate to draw attention again to the high costs of this technical assistance. Table 10 shows that this relatively small number of expatriate health personnel represented in 1991 over $13 million or about 40 per cent of the total aid support. The promotion of cost-effectiveness in this technical assistance will be discussed later in this document in the context of proposed policies for the use of international aid.

INVESTMENT HEALTH EXPENDITURE

As is usually the case, investment costs in the health sector are much less than those for recurrent activities. However, given the amount of reconstruction that is needed now in Mozambique, the mobilisation of sufficient investment resources will be a critical factor in the success of the sectoral rehabilitation strategy.

Table 15 shows the health expenditure from the government investment budget in relation to total government investment expenditure since 1980. The proportion of total investment costs allocated to health decreased from 1.7 per cent at the beginning of the 1980s to 0.3 per cent in 1987-88, after which it increased to 0.6-0.9 per cent in recent years. During this period, government investment health expenditure as a proportion of GDP remained at 0.1 - 0.3 per cent.

It was pointed out earlier (see Table 6) that since 1988 expenditures from the government investment budget have included some recurrent costs of health programmes. **Table 16** separates out true government investment costs for health and, from 1986 onwards, shows aid expenditures for health investment, thus allowing the calculation of total investment health costs. Since 1986 aid has contributed 74-91 per cent of total health sector investment costs, a degree of dependency that has become quite common for countries of Sub-Saharan Africa in recent times.

In general data do not exist for the distribution of investment expenditure by levels of health care. It is the case, however, given the insecurity prevailing in many rural areas and particularly in the more remote places, that there has been an emphasis in recent years on the rehabilitation of urban and rural hospitals.

Table 15 **Evolution of expenditure from government investment budget: total and health**

(Current prices: '000 contos)

Year	Total expenditure	Health expenditure	Health as % of total expenditure	Health expenditure as % GDP
1980	9 916	168	1.7	0.2
1981	13 962	240	1.7	0.3
1982	14 255	226	1.6	0.3
1983	17 099	168	1.0	0.2
1984	10 600	206	1.9	0.2
1985	6 655	207	3.1	0.1
1986	9 263	87	1.0	0.1
1987	68 000	192	0.3	0.1
1988	139 700	357	0.3	0.1
1989	214 300	1 878	0.9	0.2
1990	324 300	2 515	0.8	0.2
1991[a]	464 900	2 566	0.6	0.1

Note. (a) Provisional data.
Sources. NPC: Annual Statistical Information 1975-85 and 1988
Statistical Yearbook 1990
Economic and Social Plan 1992.

Table 16 Evolution of total investment health expenditure[a]

(Current prices: '000 contos)

Year	Government investment budget		International aid[b]		Total investment expenditure
	Recurrent expenditure[c]	Investment expenditure[d]	Expenditure	% total investment expenditure	
1980	-	168	NA		NA
1981	-	240	NA		NA
1982	-	226	NA		NA
1983	-	168	NA		NA
1984	-	206	NA		NA
1985	-	207	NA		NA
1986	-	87	244	74	331
1987	-	192	1 619	89	1 811
1988	39	318	1 831	85	2 149
1989	285	1 593	4 425	74	6 018
1990	576	1 939	7 706	80	9 645
1991[e]	500	2 066	20 067	91	22 133

Notes. (a) For definition, see methodological notes.
(b) Estimates based on information from donors; in general, the expenditure excludes certain costs paid directly by the donors (e.g. for consultancies, project preparation, salaries of project managers).
(c) See Table 6 and methodological notes.
(d) Estimates; for the years 1984-86, the investment expenditures of the health and education sectors were accounted together; the portion of the combined expenditure allocated to health was estimated by applying to the joint costs the average proportion of combined health and education expenditures allocated to health in the preceding four years.
(e) Provisional data; includes expenditure financed through the National Executive Emergency Committee.

Sources. MoH: DAF, NDPC and DS
MoF: State Budget 1991
NPC: Annual Statistical Information 1985 and 1988
World Bank: Working paper SvJ/25.7.91/WB.

Indeed, in contrast to the situation with hospitals, funds budgeted for the rehabilitation of rural health posts and centres could often not be completely spent. Nevertheless, the government health policy of giving priority to primary level and rural services is shown in the Three Year Public Investment Plan 1991-93 (**Table 17**). In this plan 47 per cent of the investment health budget is allocated to the primary and secondary levels of care, mostly in the rural areas.

TOTAL HEALTH EXPENDITURES

From the data of the previous tables, it is possible to compile estimates of total health expenditures, that is, recurrent plus investment expenditures, and costs financed from both internal and external sources.

First **Table 18** shows the evolution of total (recurrent plus investment) health expenditure of internal origin since 1980. Given that the recurrent costs are much greater than the investment costs, the trends shown in this table are similar to those for internal recurrent health expenditure alone (see Tables 6 and 8).

When in **Table 19** grand totals of health expenditure (recurrent plus investment, internal plus external) are compiled, it can be seen that there was a rapid increase of total health expenditure in relation to GDP from 1.8 per cent in 1986 to 5.2 per cent in 1991. Of the total health costs in recent years, some two-thirds were financed by international aid. In 1991 total health expenditure per person was equivalent to $4.2. For the purposes of comparison, Table 19 shows that, in 1980 prices, total health expenditure per person increased from Mt 148 in 1986 to Mt 208 in 1991, an increase of 40 per cent.

SUMMARY OF MAIN CONCLUSIONS

1. With respect to recurrent health costs, real expenditure per person financed from internal sources decreased in the middle of the 1980s to less than half of what it had been at the beginning of the decade, rising again gradually in recent years. International aid increased to compensate for this fall. In the last few years, more than half of recurrent health expenditure has been financed by external assistance. As a result, in 1991 prices, total recurrent costs per person were equivalent to $3.2 in 1991 compared with $2.9 in 1983. It is concluded that the current impression of an acute lack of health resources is related, not so much to an absolute shortage, but to problems in:

   - the composition of resources

Table 17 Three Year Public Investment Plan for Health Sector 1991-93[a]

(1991 prices: '000 contos)

Sub-sector	1991-93	% total
Institutional support	4 400	7
Training	4 600	7
Health posts	9 800	15
Health centres	12 200	19
General and rural hospitals	8 600	13
Provincial hospitals	5 200	8
Central hospitals	4 800	7
General support services	16 500	25
Total	66 100	100

Note. (a) Includes costs to be financed by the government and international aid.

Source. NPC: Plano Trianual de Investimento Público de Saúde 1991-93.

Table 18 Evolution of total health expenditure of internal origin

('000 contos)

Year	Recurrent expenditure	Investment expenditure	Total		Investment expenditure in constant prices[a]	Total in constant prices[a]	
			Expenditure	% GDP		Expenditure	Per person (Mt)
1980	1 480	168	1 648	2.1	168	1 648	134
1981	1 850	240	2 090	2.6	231	2 010	159
1982	2 020	226	2 246	2.4	185	1 841	142
1983	2 120	168	2 288	2.5	122	1 658	125
1984	1 720	206	1 926	1.8	126	1 182	87
1985	1 800	207	2 007	1.4	85	826	59
1986	2 010	87	2 097	1.3	35	846	59
1987	4 655	192	4 847	1.2	31	787	53
1988	8 304	318	8 622	1.3	33	882	58
1989	13 950	1 593	15 543	1.6	108	1 052	68
1990	18 932	1 939	20 871	1.6	95	1 026	64
1991[b]	28 759	2 066	30 825	1.6	73	1 085	66

Notes. (a) Base year 1980; deflation with public consumption index (Table 7). Recurrent health expenditure in constant prices is given in Table 8.
(b) Provisional data.

Sources: Tables 6, 8 and 16.

TABLE 19 Evolution of total health expenditure of internal origin and from international aid

('000 contos)

Year	Recurrent expenditure		Investment expenditure		Total			Total in constant prices[a]	
	Internal origin	Aid	Government	Aid	Expenditure	% GDP	% financed by aid	Expenditure	Per person (Mt)
1980	1 480	NA	168	NA	NA			NA	
1981	1 850	NA	240	NA	NA			NA	
1982	2 020	NA	226	NA	NA			NA	
1983	2 120	222	168	NA	NA			NA	
1984	1 720	NA	206	NA	NA			NA	
1985	1 800	NA	207	NA	NA			NA	
1986	2 010	625	87	244	2 966	1.8	29	2 123	148
1987	4 655	5 457	192	1 619	11 923	2.8	59	2 202	149
1988	8 304	16 207	318	1 831	26 660	4.1	68	2 792	185
1989	13 950	18 064	1 593	4 425	38 032	3.9	59	2 664	172
1990	18 932	30 571	1 939	7 706	59 148	4.4	65	3 131	196
1991[b]	28 759	45 840	2 066	20 067	96 732	5.2	68	3 404	208

Notes. (a) Base year 1980; aid expenditure was deflated by the method explained in Table 13, notes (a) and (b); expenditure of internal origin in constant prices is given in Table 18.
(b) Provisional data.

Sources: Tables 6, 10, 16 and 18.

- the distribution of resources

- efficiency in the use of resources

- external dependency.

2. Despite the economic difficulties of the sector, the number of health workers increased considerably during the 1980s. This increase facilitated the delivery of health care, but accentuated the decline in the real salaries of health workers: the average health worker salary in 1988 had one-third of the value in real terms as it had in 1980. Despite a slight improvement in salary levels in recent years, this fall in purchasing power has resulted in demotivation and the practice of 'moonlighting' by health personnel, and a reduction of the productivity of health work. A high priority should be given in the medium term to the improvement of the real salaries and of the conditions of life and work of health personnel.

3. In recent years technical assistance has comprised 29-48 per cent of total aid expenditure, but the high costs have translated themselves into the employment of only about 400 expatriate health workers per year. The policy and procedures for the recruitment of technical assistance personnel should be reviewed from the standpoint of cost-effectiveness and stricter criteria applied in the recruitment process in the future.

4. The purchase of drugs by the government decreased drastically during the 1980s. However, this fall was compensated by international aid, such that in 1991 drug imports were worth $1.0 per person, which represented an availability of drugs per person about four-fifths of that at the beginning of the 1980s. More drugs must be imported only to reach the level of drug provision per person of more than a decade ago.

5. In recent years 74-91 per cent of investment health costs have been financed by international aid. In 1991, the grand total of health expenditure per person (financed from internal sources and through international aid, and for recurrent and investment costs) reached 5.2 per cent of GDP; 68 per cent of the total expenditure was financed by external assistance. Total health expenditure per person was $4.2, which was 40 per cent higher in real terms than in 1986. It is evident that this expanded - and hopefully expanding - volume of health resources must be well planned and managed. That subject is addressed in later sections of this document.

TRENDS IN THE DISTRIBUTION OF RECURRENT HEALTH RESOURCES

This section analyses the distribution of health resources in the country. Information is given about the latest year for which data are available and, where possible, trends in resource distribution over previous years are shown. Data are presented for recurrent expenditure, for some categories of health personnel, and for drugs. In all cases the resources include those financed from internal sources and through international aid. Distribution of resources is analysed by level of health care, by urban/rural areas, and by province.

DISTRIBUTION BETWEEN LEVELS OF HEALTH CARE

Table 20 shows the percentage distribution of total recurrent health expenditure, salary expenditure and drug expenditure by levels of care for the year 1991. (The definitions of the levels of care are given in the methodological notes.) In general, the primary level absorbed about a fifth to a third of the expenditures, the secondary level about an eight of the expenditures, and the tertiary and quaternary levels combined about a half to two-thirds of the expenditures. The concentration of resources in the two highest levels was most marked in the case of salary expenditure; 67 per cent of total salary costs were absorbed by these levels. Thus the 12 provincial, central and specialised hospitals consumed more than half of all three types of recurrent expenditure. The share of the secondary level was particularly low and reflects the historical weakness of the rural hospital network in Mozambique.

Table 21 shows trends in the distribution of some categories of health personnel during the 1980s. Doctors have been concentrated heavily at the tertiary and quaternary levels and this concentration increased during the decade; the proportion of doctors at these levels rose from 66 per cent in 1980 to 76 per cent in 1989, at the cost of the other levels. Although it is not shown in the table, between 1980 and 1985 the number of doctors in Maputo Central Hospital increased from 92 to 117, that is, from 31 to 41 per cent of the total doctors in the country. This concentration of doctors in Maputo began before the intensification of the war during the 1980s and has been most evident in the case of Mozambican doctors. In 1990, owing mainly to the increase in the number of doctors in other hospitals, the proportion of total doctors in Maputo Central Hospital decreased to 27 per cent.

The concentration of doctors in the higher levels of care has been compensated up to a point by the distribution of medical assistants and aides. Taking these three

Table 20 Percentage distribution of health expenditure[a] by level of care 1991

Level[b]	Recurrent expenditure	Salary expenditure	Drug expenditure
Tertiary/ quaternary	58	67	51
Secondary	15	13	12
Primary	27	20	37

Notes. (a) Includes expenditure financed from internal sources and by international aid; includes expenditure on health programmes, but excludes the salary costs of personnel in the MoH headquarters, provincial and district health directorates, and training and other institutions not concerned directly with health care delivery.

(b) For definition of levels of care, see methodological notes.

Sources. MoH: NDPC, DAF, DS and MEDIMOC.

Table 21 **Trends in percentage distribution of some categories of health personnel[a] by level of care**

Level[b]	Doctors			Doctors plus medical assistants and aides			Nurses			Midwives and MCH nurses			Preventive health assistants and aides		
	1980	1985	1989	1980	1985	1988	1980	1985	1989	1980	1985	1989	1980	1985	1989
Tertiary/ quaternary	66	78	76	43	34	34	45	43	39	36	39	16	NA	1	2
Secondary	18	10	15	19	10	19	14	14	18	20	19	19	NA	15	18
Primary	16	12	9	38	56	47	41	42	43	44	42	65	NA	84	80

Notes. (a) Includes personnel paid by the government and through technical assistance, but excludes staff not engaged in direct health care delivery (see note (a) in Table 20).
(b) For definition of levels of care, see methodological notes.

Sources. MoH: Annual Statistical Information (various).

categories of health workers together, the proportion at the primary level increased, and that at the tertiary/quarternary levels decreased, during the 1980s. In 1988, 47 per cent of these personnel combined were working at the primary level.

With respect to nurses, a slight increase in the proportion working at the secondary level can be seen by the end of the 1980s, at the cost of the higher levels of care, while throughout the period more than 40 per cent of the nurses were located at the primary level. Large numbers of MCH nurses were trained during the 1980s and they were deployed mainly in the rural areas and mainly at the primary level. This training and deployment policy is reflected in Table 21, which shows that the proportion of midwives and MCH nurses at the primary level increased from 44 per cent in 1980 to 65 per cent in 1989. The table also shows that most preventive health personnel were deployed at the primary level during the decade.

In general, therefore, it can be said that the distribution of the elementary and basic grades of health personnel has reflected well the policy of giving priority to primary level health services. However, attention should be drawn again to the concentration of doctors in the main city hospitals, which absorbed 76 per cent of the total in the country in 1989.

DISTRIBUTION BETWEEN URBAN AND RURAL AREAS

Table 22 shows trends in population to health worker ratios during the 1980s for the main categories of health personnel and for three types of area: the City of Maputo, other cities, and the rest of the country.

The problem of the concentration of doctors in the large cities is once again clear. The table shows that the population to doctor ratio in the City of Maputo stayed more or less constant during this period, while the ratios in the other parts of the country deteriorated from the middle of the decade. In 1988, there were 5,500 people per doctor in the City of Maputo, 18,300 people per doctor in the other cities, and as many as 501,700 people per doctor in the rest of the country.

The table shows again that, considering doctors and medical assistants and aides together, the situation is less unbalanced and has been somewhat more stable. Even so, the urban population has been much better served by this group of medical workers than the rural population.

The urban/rural distribution of nurses stayed more or less constant during the 1980s. Nevertheless, the population of the cities was 5-6 times better served by nurses than that of the rural areas. Only in the case of

Table 22 Trends in population to health worker ratios for some categories of personnel[a] by urban/rural areas

(Population '000)

	1980			1984			1988		
	Maputo City	Other cities	Rest of country	Maputo City	Other cities	Rest of country	Maputo City	Other cities	Rest of country
Doctors	5.2	6.5	249.0	5.8	6.1	234.6	5.5	18.3	501.7
Doctors plus medical assistants and aides	4.7	5.1	65.3	5.2	4.0	39.4	4.4	9.3	60.2
Nurses	1.2	1.9	9.5	1.6	0.9	14.5	1.8	1.7	10.3
Midwives and MCH nurses	5.4	7.0	52.3	5.8	5.1	28.8	3.7	5.4	24.7

Note. (a) Includes personnel paid by the government and through technical assistance, but excludes staff not engaged in direct health care delivery (see note (a) in Table 20).

Sources. MoH: Annual Statistical Information (various).

MCH personnel was there an improvement during the 1980s in the relative position of the rural areas, as a result of the training and deployment of MCH nurses.

DISTRIBUTION BETWEEN PROVINCES

Table 23 shows trends in population to health worker ratios for the main categories of health personnel, nationally and by province.

At the national level, the reduction in the availability of doctors relative to the population can be seen in the deterioration in the ratio of 38,100 people per doctor in 1979 to 45,500 people per doctor in 1990. It is clear that doctors are a very scarce resource in Mozambique and for this reason they should be distributed strictly in accordance with the health needs of the people. By contrast, the table shows an improvement in national population to worker ratios for medical assistants and aides, nurses, and MCH personnel. There was, however, a deterioration in the number of preventive health workers relative to the population during this period, as a result of a slowing in the training programme of this personnel category.

With respect to provincial distribution, Table 23 shows that two provinces stand out: the City of Maputo and the Province of Zambézia. For all the categories of health personnel presented, the City of Maputo is always the best served and Zambézia Province is (almost) always the least served.

While most of the provinces experienced a considerable deterioration in the availability of doctors during the 1980s, the City of Maputo was not only much better served than the other provinces, but the population to doctor ratio actually improved during the decade. In 1979, there were 34 times more people per doctor in Zambézia than in Maputo City and by 1990 this advantage had increased to 73 times. Taking doctors and medical assistants and aides together, the availability of these health personnel relative to the population improved during the decade in almost all the provinces, although in 1990 Zambézia had 17 times more people per worker of this medical group than Maputo City.

There was an improvement in the availability of nurses during the 1980s in nine out of the 11 provinces. Nevertheless in 1990, the number of people per nurse was nine times higher in Zambézia than in the City of Maputo. The availability of MCH personnel improved considerably in all the provinces during the decade, although in 1990 Maputo City was still 11 times better served than Zambézia.

Table 23 **Trends in population to health worker ratios for some categories of personnel[a] by province**

(Population '000)

Province	Doctors			Doctors, medical assistants and aides			Nurses			Midwives and MCH nurses			Preventive health assistants and aides		
	1979	1985	1990	1979	1985	1990	1979	1985	1990	1979	1985	1990	1979	1985	1990
Niassa	47.7	73.0	95.2	20.8	13.0	18.0	4.5	4.2	4.4	31.8	13.3	13.9	15.4	24.4	24.7
Cabo Delgado	105.4	59.3	101.7	52.7	21.8	23.0	8.8	6.6	5.7	41.3	50.9	21.8	22.6	42.7	53.0
Nampula	77.5	136.5	158.9	54.6	31.0	40.2	7.3	9.7	6.0	38.1	29.1	30.0	34.3	44.1	45.4
Zambézia	183.4	202.8	270.2	80.2	33.4	52.3	14.3	9.9	9.0	85.6	24.5	31.8	47.5	49.0	56.9
Tete	45.1	78.6	51.3	31.2	23.0	23.4	5.3	5.6	5.6	32.5	18.2	17.1	15.3	27.0	43.1
Manica	68.2	121.5	63.9	30.7	24.3	20.3	6.0	6.0	5.0	40.9	17.0	12.6	29.2	34.7	30.8
Sofala	27.8	48.4	65.8	20.2	19.2	20.3	4.4	4.1	3.1	27.8	18.9	12.1	25.3	34.6	34.5
Inhambane	110.6	70.8	61.6	39.8	22.2	24.0	6.6	5.9	5.5	19.2	14.2	12.2	26.9	33.3	32.3
Gaza	64.1	86.5	142.7	34.3	21.6	25.2	7.3	5.9	5.1	22.9	12.2	13.2	32.0	34.1	31.3
Maputo Province	67.8	93.0	79.7	}6.5	19.2	22.5	}1.3	11.9	4.4	}6.7	13.6	9.7	}18.9	23.2	30.2
Maputo City	4.7	5.7	3.7	}	4.8	3.0	}	1.4	1.0	}	3.9	2.9	}	20.9	12.1
Mozambique	38.1	48.0	45.5	26.7	18.5	20.3	5.2	5.5	4.5	26.5	15.9	13.8	27.2	35.0	35.9

Note: (a) Includes personnel paid by the government and through technical assistance, but excludes staff not engaged in direct health care delivery (see note (a) in Table 20).

Source. MoH: Annual Statistical Information (various).

By contrast, there was a marked deterioration in the ratios of population to preventive health personnel in almost all the provinces during the 1980s; only Maputo City showed a considerable improvement.

Available data allow for the analysis of the provincial distribution of one other type of health resource, namely drugs. **Table 24** shows drug expenditures per person by province for the years 1979 and 1990 and the ratios of this expenditure in the better supplied provinces to that in the least supplied province. It can be seen that in 1979 the variation in this ratio was quite small: the City and Province of Maputo together were 3.6 times better provided with drugs per person than the least supplied province (Manica). On the other hand in 1990, the inequality in the distribution of drugs was much greater: the City and Province of Maputo together were 14.2 times better provided with drugs than the least supplied province (Zambézia). The City of Maputo alone was 21.4 times better supplied than Zambézia in 1990.

Although not shown in this table, the drug expenditure of Maputo Central Hospital increased from 10 per cent of the total drug expenditure in the country in 1979 to 25 per cent in 1988 and 30 per cent in 1990.

SUMMARY OF MAIN CONCLUSIONS

At the time of independence, Mozambique inherited an unbalanced health care system, biased towards large hospitals and the urban areas, especially the City of Maputo. It was thanks to the post-independence national health service and the policy of primary health care that a considerable expansion in primary level health services took place, above all in the rural areas, although the rural hospital network has remained weak.

However, since the beginning of the 1980s, there has been a tendency towards the reconcentration of health resources, especially in Maputo City and in Maputo Central Hospital. This tendency has been most marked in the case of doctors (particularly Mozambicans) and drugs - both crucial categories of health resource. The imbalance in the health system in favour of urban areas and large hospitals thus remains a problem.

Although the insecurity in the countryside has been one of the causes of this shift of resources to urban health facilities, it has not been the only one, because the process began before the war intensified in the middle of the 1980s. With the coming of peace, it will be necessary to apply specific policies to attract health personnel (including Mozambican doctors) to work in the rural areas, in the least served provinces, and at the lower levels of health care. Such policies are discussed in the next section.

Table 24 Trend in distribution of drug expenditure[a] per person by province

(Current prices: meticals)

Province	1979		1990	
	Expenditure/ person	Ratio[b]	Expenditure/ person	Ratio[b]
Niassa	33	1.3	492	2.4
Cabo Delgado	29	1.1	386	1.9
Nampula	30	1.2	245	1.2
Zambézia	27	1.0	208	1.0
Tete	34	1.3	272	1.3
Manica	26	1.0	343	1.7
Sofala	41	1.6	1 824	8.8
Inhambane	35	1.4	467	2.3
Gaza	34	1.3	730	3.5
Maputo Province	92	3.6	654	3.1
Maputo City			4 458	21.4
			2 958	14.2
Mozambique	37		741	

Notes. (a) Expenditure on drugs supplied to provinces.
(b) The ratio of expenditure per person in better supplied provinces to that in the least supplied province.

Source. MoH: DPh.

POLICIES FOR THE REHABILITATION OF THE PUBLIC HEALTH SECTOR IN THE MEDIUM TERM

PRINCIPLES AND PRIORITIES

The strategy to be described for the rehabilitation and development of the public health sector in Mozambique is based on certain health system principles and priorities. Since many of these principles and priorities are already aspects of Ministry of Health policy and/or are accepted elements of international health policy, their presentation here is mainly in summary form.

General

1. From its inception, the national health service of Mozambique has been based on the policies of primary health care and the use of essential drugs, and these policies will continue to guide the development of the public health service in the future. The aim is to extend essential health care progressively to the entire population, with priorities set on the basis of relative health need.

2. A high priority will continue to be given to health promotion and disease prevention, through programmes like those for mother and child health, immunisation, and communicable disease control. Units like health posts, which have been exclusively curative, will come to assume also preventive and promotive functions. In addition, greater emphasis will be placed on measuring the impact of health programmes. Indicators will be developed and used to monitor more systematically the effectiveness and cost-effectiveness of programme activities.

3. During the colonial period, the health services for the majority of the Mozambican people were derisory. In the early years after independence, great efforts were made to extend health care rapidly to underserved populations, especially in the rural areas. This policy was understandable and commendable. It led, however, to more attention being paid to the quantity of health services than to their quality and efficiency. While every effort will be made in the medium term to restore the health service quantitatively to the level it attained in the early 1980s, more emphasis than before will be placed on the improving the quality of care and the efficiency of services.

Rehabilitation of the Health Care System

4. All levels of the health care system are in serious need of rehabilitation, from rural health posts to central hospitals. Despite the priority to be given

to primary level care in the rehabilitation process, hospitals must also be included: they provide essential curative services and are - or should become - centres for referral of patients and support for lower levels of the health system. Rural secondary care has always been weak in Mozambique and a high priority will be afforded to the upgrading and expansion of the rural hospital network. In particular, rural hospitals must become capable of offering emergency surgical and obstetric services. Nevertheless, in general in the rehabilitation process, priority will be given to the primary level of care.

5. Priority will also be given to rehabilitating the health services in the rural areas, where the level of care is currently so low. The upgrading of rural health services will be the contribution of the health sector to the restoration of normal life in the countryside, such that it may be more attractive for rural migrants to the towns to return to their home areas. The location of rural health facilities will take account of the new agglomerations of people which are the inheritance of the camps for the displaced population. Some priority will also be given to the upgrading of health services in the periurban areas which have become swollen with rural migrants, not all of whom will return to the countryside.

6. In the rehabilitation process, therefore, first priorities will be afforded to rural primary level facilities and rural hospitals and, where appropriate, to primary level units in periurban areas. This means that, given the scarcity of resources, it will be necessary to limit the allocation of additional resources to the urban health services, especially to the larger hospitals. In these urban services, which are relatively well developed, there are ample opportunities for improving efficiency: it should be possible to raise the quality and increase the volume of service without entailing a proportionate increase in the consumption of resources.

7. Rural health centres in Mozambique have been looked upon as relatively big units, with quite large numbers of personnel, and have been correspondingly expensive to run. However, they have often operated inefficiently. This is partly because larger units are more difficult to manage and partly because the numbers of the people living in the immediate vicinity of the centres have not always justified the number of health workers on the staff; given the difficulties of rural transport, a catchment area with a radius of more than a few kilometres is often mainly theoretical. In future, physical accessibilty and density of the population will be more important criteria in determining the size and location of

rural health facilities. In general fewer, if any, big health centres will be built and more reliance will be placed on the provision of a larger number of small facilities situated closer to people's homes. These health facilities will have preventive, promotive and curative functions. Such small curative plus preventive units have been termed in the past 'developed health posts'. However, since they should have in effect health centre functions, they are referred to in this work as 'mini health centres', a term which emphasises their preventive and outreach responsibilities. Existing health posts in both rural and urban areas will be gradually upgraded to mini health centres.

8. The not-for-profit non-government organisations will play an increasingly important role in the provision of health services in Mozambique, especially in the rural areas. Rural health facilities which are owned and run by these organisations are strictly part of the private sector. Nevertheless, their work should be integrated with that of the rest of the district health system and the strategy presented in this document includes voluntary health services with the public sector for planning purposes.

Health Personnel

9. Health services are only as good as their health workers, who are the most valuable resource of any health system. In Mozambique, it is necessary to raise the productivity of health personnel and improve the quality of their care. Among the measures to be taken to achieve this will be the following:

- training institutions will be rehabilitated and equipped, and their teaching staff strengthened; courses and curricula will be reviewed and revised

- stricter educational criteria will be applied in the selection of candidates for basic training

- more emphasis will be placed on refresher and upgrading courses for existing health personnel

- promotion, including between grades, will be facilitated and will be based on more objective criteria, so that personnel will have professional and material incentives to perform well

- support to existing personnel will be increased by establishing systems of in-service training, regular supervision and the flow of professional information

- the decline of real salaries during the 1980s has had a demotivating effect on health workers and has obliged many of them to 'moonlight' in order to

support their families; every effort will be made to increase the real income of health personnel to the extent that the economy allows; in the present work, a projection has been made for an increase in the average real salary of health personnel by the year 2000 to a point midway between the present level and that which obtained at the beginning of the 1980s.

10. During the 1980s, many health workers moved from rural to urban areas and from working at lower levels of care to higher levels. This applied particularly to personnel, like doctors and nurses, who were capable of working in hospitals. With the end of the war, special attention will be paid to encouraging health personnel to work in the rural areas and in underserved provinces where they are greatly needed, and to rewarding them for doing so. Among the measures to be taken will be the following:

- more people will be recruited for health worker training from underprivileged provinces and areas, since they will be more prepared to work in these places after graduation

- priority for post-basic training and promotion will be given to personnel who have served in priority areas

- decent housing will be provided for health personnel and their families

- a system of allowances will be instituted to compensate personnel for hardship postings and for lost opportunities to earn additional income

- clearer regulations about the obligation to serve in rural and other priority areas will be made.

11. The government health budget will be constrained for the foreseeable future. If the real salaries of public health workers are to increase, a limit must be placed on the number of health personnel that the government employs. The Ministries of Health and Finance have agreed that in the medium term the total number of employees of the national health service should remain effectively at the present level. In this work, it has been assumed that the number of health service employees in the year 2000 will not exceed 17,000. However, the numbers of qualified and more highly trained professionals will be increased by the following means:

- some support staff will be upgraded to become, or will be substituted by, professional health personnel; the ratio of trained to untrained employees in the health service will be increased from the present 1:1 to 2:1

- the proportion of health workers in the middle and higher grades will be increased; this will be achieved by post-basic training and promotion of personnel from lower grades and by expansion of recruitment for the basic training of middle and higher grades.

12. The key categories of the basic grade will the medical aides, preventive health aides, and MCH nurses. These workers will be the main personnel for the new mini health centres and the backbone of the primary level services. They will be trained in sufficient numbers to staff the rehabilitated and expanded rural health infrastructure. The cadre of 'basic nurses' has not fulfilled satisfactorily its anticipated role in primary health care and these workers will be regarded primarily as nurses in the ordinary sense of the term; in the meantime, however, they will substitute for medical aides until sufficient of these personnel have been trained.

Drugs and Other Operating Items

13. A major cause of low productivity of health personnel in Mozambique is a lack of drugs, equipment and other operating items which they need to carry out their work. Every effort will be made to keep health personnel supplied with essential operating inputs. In this work, an attempt has been made to calculate the needs of the primary and secondary levels of the health service for drugs and other operating items. The projection is made to reattain by the year 2000 the level of drug provision per person that prevailed at the beginning of the 1980s. Given the shortage of foreign exchange and rate of population growth, this will not be an easy goal to achieve.

Maintenance and Management

14. Too often capital investments are made in health facilities, equipment and vehicles without adequate provision being made for maintenance. The result is that the capital goods deteriorate rapidly and have to be replaced prematurely: much of the original investment is wasted. In the cost projections of this work, estimated recurrent expenditures include a provision for maintenance. But adequate systems of maintenance - and especially of preventive maintenance - still have to be developed.

15. Reference has been made already to the need to improve the quality, effectiveness and efficiency of health services and programmes. This implies the need to improve health system management. Two areas will be given special attention:

    - hospitals, especially the central and provincial hospitals, are responsible for a high proportion of the country's health expenditure, but there is

ample scope for improving the quality of their care and increasing the efficiency with which they use resources; professional hospital management will be strengthened or introduced and a system of performance indicators will be developed to monitor progress in the areas of quality and efficiency

- an integrated health system based on primary health care demands effective planning and management at ministry, provincial and district levels, and efforts will be made to increase the number of personnel trained to perform these functions; particular attention will be paid to the district level, which is the basic unit of health service delivery in the rural areas; training of personnel of the district health directorates in planning, management, programme development and implementation, and support and supervision of primary level services, will be a high priority; the main responsibility for support and supervision of rural primary services will pass to a trained mobile team based at the district level; a system of indicators will be established to monitor progress in district health system development.

16. The use of resource allocation as a means of implementing government health policy implies reform of the present system of financial management. Procedures must be developed to strengthen the links: between health planning and administrative systems (for example, by making budget categories correspond to planning categories like levels of health care); between the investment and recurrent budgets; between departments of the Ministry of Health; between the different administrative levels of the national health service; between the Ministries of Health and Finance and the National Planning Commission; and so on. Such reform will not be easy, but it is essential if health policy - including the rehabilitation strategy developed in this work - is to be translated into reality. The next phase of PRANHP will study the need for reforms in financial management in the short, medium and long term.

17. The health information system is also in need of rationalisation. Necessary data should be collected and analysed in as simple a form as possible and be channelled expeditiously to those who will use it - including the people who generated the data in the first place. Conversely, information without a clear use should be eliminated from the system. Work will continue on the development of a functional health information system.

International Aid

18. Support from the international community has been crucial for the survival of the Mozambican health service in the last several years and will remain so

for some years to come. The strategy for rehabilitation of the service presented in this document depends on the continuation of this international solidarity. There is, however, associated with this level of support a serious problem of external dependency. The strategy attempts to address this problem and begins to move the health system in the direction of national sustainability in the long run.

19. The main problem of dependency arises when donors finance a high proportion of recurrent costs, such that the routine operation of the health service depends on the continuation of international support. In the strategy to be presented, an increasing proportion of donor assistance is projected to be in the form of support for investment costs - the traditional area for external aid. Donor support for recurrent costs is also projected to increase, but more slowly than the financing from internal sources, so that the proportion of external financing of recurrent costs will gradually fall.

20. The need to increase the availabilty of drugs in Mozambique has been shown above. Since almost all drugs must be imported, international aid will continue to be the main source of finance for drug purchases. It is projected that an increasing proportion of donor support for recurrent costs will be used for drug imports.

21. Technical assistance will continue to be an important component of international aid. Expatriate health workers have filled important staffing vacancies in the health service, especially for doctors and other specialised personnel, and have ensured the functioning of many of the country's hospitals. However, as has been pointed out already, a relatively small number of foreign professionals has been employed at a very high cost and technical assistance comprises a high proportion of total health aid. There are other causes of concern with the technical assistance programme: not all the expatriate personnel have had appropriate skills; some of them have been recruited on excessively short contracts; and sometimes foreign professionals have been imposed on the health service through aid projects and it has been difficult for local officials to control their activities. In the strategy developed in this work, it is projected that technical assistance will constitute a decreasing proportion of donor support for recurrent costs. The application of stricter criteria in the recruitment process should make it possible to select good quality cadres at a reasonable cost. This policy could be realised more easily if the Ministry of Health were permitted to undertake the foreign recruitment directly, allowing national officials a greater say in the selection, terms of contract and

cost of individuals, as well as a greater control on the mix of personnel recruited (for example, in future less middle level personnel will be needed and greater emphasis will be placed on the recruitment of more highly qualified professionals).

22. The Ministry of Health benefits from a large number of foreign aid projects: there were 116 separate projects in 1989. As mentioned above, this assistance is vital to the survival of the Mozambican health service. However, the form of the cooperation leaves room for improvement. The large number of distinct projects, some of them quite small, makes it virtually impossible for the national health authorities to manage them all properly. Funds are spent on studies and consultancies, and on administration, which do not have a great bearing on the development of services. The pattern of assistance has also sometimes been at variance with national health policy. For example, support for health programmes in a vertical form has weakened the Ministry's policy of integrated primary health care. In addition, much of the aid is tied and this has limited the ability of the government to 'shop around' in the world market and obtain good 'value for money'. In the case of drugs, for example, Mozambique has considerable experience in the purchase of products of good quality at reasonable prices, but a substantial portion of aided drug imports by-passes this national capacity, which is weakened as a consequence. Thus the present procurement mechanisms of international assistance lack cost-effectiveness. The Ministry of Health will try to convince donors that their cooperation would be of greater value if more of their aid came in the form of untied budget support. This would allow the health authorities to integrate the assistance more effectively into the Mozambican health service and national structures would be stengthened in the process. It is understood that the Ministry would have to account fully to the donors for the use of aid in this form. This approach to international cooperation would also reduce the number of separate projects; those that remained would be larger, better defined and better managed.

23. The Ministry of Health will attempt to increase its capacity to plan and manage foreign assistance and to negotiate constructively and creatively with donors. The present exercise of reformulating national health policy should result in a coherent strategy for the rehabilitation of the Mozambican health service in the medium term. This strategy will be translated into detailed plans, which will be presented proactively to donors for funding.

STRATEGY FOR HEALTH SERVICE REHABILITATION

The strategy developed for the rehabilitation of the public health service follows from the principles and priorities just described. More details concerning the strategy may be found in the companion document of PRANHP, 'Revision of National Health Policy: Strategies and Priority Actions' by Bata, Simão and Chomera Jeremias. Here some key aspects of the strategy are presented and given a quantified form.

It should be emphasised that the strategy does not constitute a detailed health development plan. More work is still needed at the micro-level to determine which health facilities will be rehabilitated in a given area in a given year, the exact specifications of the rehabilitation, the location of new primary level units, the phasing of the intakes of training institutions, and so on. The strategy traces the broad lines to be adopted for health sector development in the medium term, costs them, and identifies feasible financing mechanisms.

The project PRANHP has concentrated so far on the primary and secondary levels of health care. The strategy, and the resources needed, to rehabilitate and run the health service network at these priority levels have been identified with some care. These levels will be given the first priority in the resource allocation process. To a large extent, growth in spending by city hospitals has had to be treated for the time being as a residual within the overall ceiling projected for the growth of public health expenditure. More detailed work on a development strategy for the urban hospital services will be undertaken in the near future.

Staffing patterns are presented for the different types of primary and secondary level health facilities. These personnel establishments are a compromise between various existing proposals. It is understood that in practice the staffing of individual health facilities will vary according to particular circumstances, notably the availabilty of personnel at the time and the number of people a unit serves. The teams shown indicate the 'average' staffing patterns to be aimed for in the medium term and are used in this work mainly to calculate the unit recurrent costs of rehabilitated health facilities. Within the general parameters of these costs, therefore, more refined definitions of staffing patterns can be made.

In this strategy, rehabilitation or construction of primary and secondary level facilities includes the provision of equipment and furniture, means of transport for outreach activities, and staff housing. For the operation of rehabilitated or new facilities, financial provision is made for adequate supplies of drugs and

other operating inputs, including those needed for outreach work and maintenance.

The description of the rehabilitation strategy will begin with rural hospitals, because of their key place in the rural health infrastructure and because their number will determine the number of rural health centres to be rehabilitated. Urban general hospitals will be dealt with at the same time.

Rural and General Hospitals

Rural secondary care has always been weak in Mozambique and the need to strengthen this component of the health care network has been mentioned already. The essential service that these hospitals must provide is emergency surgical and obstetric care; it is this service which distinguishes a rural hospital from a rural health centre. The hospitals will provide the four basic specialities of internal medicine, surgery, obstetrics and paediatrics.

In addition to their strictly hospital role, rural hospitals will undertake the primary preventive and curative activities of a rural health centre. These primary level services will normally be provided in a separate health centre wing of the hospital although, for the purposes of economy, this wing will share many common services (like the pharmacy, laboratories, laundry, kitchen) with the rest of the facility. There will also normally be a rotation of staff between the wards and the health centre wing, so the hospital staff can keep in touch with both inpatient and primary health care work and see the connection between them. Rural hospitals will be responsible for providing mobile services and for supporting and supervising the primary level facilities in the district. All relevant staff will be mobilised for this outreach work, including hospital clinical personnel, who can play a valuable role in upgrading the quality of curative care offered at the primary level. In the rehabilitation strategy, two vehicles are allocated to each rural hospital for outreach activities.

The typical staffing pattern of a rural hospital is shown in **Table 25**. The team includes the personnel necessary for the hospital, health centre and mobile/supervisory functions. The policy that rural hospitals should become centres of emergency surgery and obstetrics implies that senior medical students and young doctors will have to have more - and more practical - training in surgical techniques. Adequate numbers of surgical assistants and nurses specialised in anaesthetics, theatre work and midwifery must also be trained.

Existing rural hospitals will be rehabilitated. Most new rural hospitals will be developed by upgrading existing rural health centres located in district administrative centres. The number of new hospitals that can be

Table 25 Average staffing patterns of rehabilitated health facilities at the primary and secondary levels[a]

Rural hospitals

2	doctors
1	surgical assistant
1	medical assistant
1	preventive health assistant
1	laboratory assistant
0,5	dental assistant
1	pharmacy assistant
4	general or specialised nurses
1	nurse midwife
3	medical aides
2	preventive health aides
1	pharmacy aide
2	laboratory aides
1	radiology aide
1	dental aide
14	basic nurses
5	MCH nurses
1	administrative aide
10	support workers

General hospitals

4	doctors
1	surgical assistant
1	medical assistant
1	preventive health assistant
1	laboratory assistant
1	dental assistant
1	radiology assistant
1	pharmacy assistant
1	administrative assistant
6	general or specialised nurses
2	nurse midwives
3	medical aides
2	preventive health aides
1	pharmacy aide
2	laboratory aides
1	radiology aide
2	dental aides
14	basic nurses
5	MCH nurses
2	administrative aides
10	support workers

District rural health centres[b]

1	medical assistant
1	medical aide
2	preventive health aides
1	dental aide
2	basic nurses
2	MCH nurses
0,5	pharmacy aide
0,5	laboratory aide
1	administrative aide
0,5	pharmacy auxiliary
0,5	microscopist
1	elementary nurse
4	support workers

Other rural health centres

1	medical assistant or aide
1	preventive health aide
1	basic nurse
1	MCH nurse
1	pharmacy auxiliary
1	microscopist
1	elementary nurse
1	elementary midwife
3	support workers

Mini health centres: rural or urban

1	medical aide or basic nurse
1	preventive health aide
1	MCH nurse or elementary midwife
1	support worker

Village health post

1	village health worker or first aid worker or elementary nurse

Urban health centres[b]

1	medical assistant
1	general nurse
1	nurse midwife
1	medical aide
1	preventive health aide
1	laboratory aide
1	dental aide
1	pharmacy aide
3	basic nurses
3	MCH nurses
1	administrative aide
5	support workers.

Notes. (a) The number 0.5 of a health worker means that only one in two of the type of health facility will have this cadre.
(b) Some facilities of this type may have a doctor.

developed in the medium term is limited, not so much by financial constraints, but by the lack of staff to run them and the limited building capacity in the rural areas. The selection of districts for new hospitals will be made on criteria of population size, transport links, and economic importance; all of the government's defined priority districts whose population lacks reasonable access to hospital services (either in their own or in a neighbouring district) will be included.

A provincial list of hospitals to be rehabilitated or built in the medium term is shown in **Table 26.** Fourteen rural hospitals in priority districts and eight in non-priority districts are identified for rehabilitation (work is already in progress in several hospitals). New rural hospitals are projected for six priority districts and nine non-priority districts (in some cases, the exact selection has still to be made). Thus by the end of the rehabilitation period, the number of rural hospitals will have increased from 22 to 37.

The effect of this strategy on the distribution of rural hospitals by province is illustrated in **Table 27.** This shows the changes in rural population to rural hospital ratios that would result if the rehabilitation/construction works were completed by the year 2000. Nationally there would be a decrease from 611,000 to 475,000 rural people per hospital. The table shows that the strategy would narrow the difference between the provinces in the number of people served per hospital; the ratio of the number in the least served province (Zambézia) to that in the best served province (Gaza) would decrease from 5.2 in 1990 to 2.2 in 2000.

Table 26 also shows that the four general hospitals of the City of Maputo are due for rehabilitation (work is already in progress in two). A general hospital has been foreseen for Nacala for some time and that hospital is included in the table. The city has more than 100,000 people and an important economic role in the context of the Nacala corridor. There is no space to upgrade the present health centre to a general hospital and construction of a hospital on a new site is already included in the development plan for the city.

In the rehabilitation strategy, two new elements are added to the specification of a general hospital: these are an accident and emergency service (which in Maputo will take the pressure off the Central Hospital) and a maternity service for the referral of local women with high risk pregnancies. The average staffing pattern of a general hospital is shown in Table 25. In addition to work within the hospital, the staff will be responsible (as in the case of rural hospitals) for supporting and supervising primary level facilities in its area. Among other elements of such support, doctors from the hospital will make regular supervisory visits to local health centres and will conduct outpatient sessions there.

Table 26 Rural and general hospitals for rehabilitation or construction in the medium term[a]

Rehabilitation		Construction (in most cases by upgrading rural health centres)	
Priority districts[b]	Non-priority districts	Priority districts[b]	Non-priority districts
RH Cuamba[c]	RH Mocímboa da Praia[c]	RH Nametil (Mogovolas)	RH Alto-Molocué
RH Mueda	RH Angoche[c]	RH Catandica (Barué)[c]	RH Maganja da Costa
RH Montepuez[c]	RH Songo (Cabora Bassa)	RH Homoíne or RH Panda or RH Massinga	RH Mutarara or RH Changara
RH Monapo	RH Vilankulo[c]	RH Moamba[c]	RH Espungabera (Mossurize)
RH Namapa	RH Marromeu	RH Luabo (Chinde)[d]	RH Marrupa
RH Ribaué	RH Chicuque (Maxixe)[c]	RH Pebane or RH Milange	RH Inhaminga[d] or RH Chibabava
RH Mocuba	RH Chicumbane (Xai-xai)[c]	GH Nacala	RH Moma or RH Malema or RH Murrupula
RH Gurué[c]	RH Xinavane		RH Macomia
RH Ulongué (Angónia)[c]	GH Mavalane[c]		RH Chicualacuala or RH Massingir
RH Nhamatanda[e]	GH José Macamo[c]		
RH Búzi	GH Chamanculo		
RH Chokwé[c]	GH Machava		
RH Chibuto			
RH Mandlakaze[c]			

Notes. (a) The list of hospitals is provisional. The target is to complete this rehabilitation by the year 2000.
(b) Priority districts defined by the government; in those not included in this list, the population has reasonable access to hospitals in neighbouring districts or to provincial hospitals.
(c) Rehabilitation or construction in progress.
(d) Facility in need of complete reconstruction.
(e) Rehabilitation already complete.

Table 27 Projection of rural population to rural hospital ratios by province resulting from the rehabilitation strategy[a]

Province	1990			2000[b]		
	Number of rural hospitals	Rural population ('000) per hospital	Ratio[c]	Number of rural hospitals	Rural population ('000) per hospital	Ratio[c]
Niassa	1	604	2.0	2	394	1.3
Cabo Delgado	3	385	1.3	4	376	1.2
Nampula	4	705	2.4	6	613	2.0
Zambézia	2	1 548	5.2	6	673	2.2
Tete	2	491	1.6	3	442	1.4
Manica	0	-	-	2	473	1.5
Sofala	3	362	1.2	4	354	1.1
Inhambane	2	623	2.1	3	542	1.7
Gaza	4	299	1.0	5	312	1.0
Maputo Province[d]	1	539	1.8	2	351	1.1
Mozambique	22	611		37	475	

Notes. (a) See Table 26.
(b) Projection based on the scenario that the rehabilitation will be completed by the year 2000; population projection taken from the National Planning Commission.
(c) The ratios of the rural population per rural hospital in the less served provinces to that in the best served province (Gaza).
(d) Includes the population of Matola.

Rural Primary Level Facilities

In this strategy, four types of rural primary facilities are recognised: district rural health centres (located in district administrative centres), other rural health centres, rural mini health centres, and village health posts (**Table 28**). This classification is somewhat different from that which has been used the past and has been made for the following reasons (discussed already above):

- the need to bring health centre functions closer to rural people's homes

- problems in the efficiency of larger rural health centres

- the assigning of the main responsibilty for support and supervision of rural primary level facilities to specialist mobile teams based at the district level.

The strategy envisages that the primary level network will be rebuilt in the medium term to the maximum strength that existed in the 1980s (that is, a total of 1,421 units) minus the 15 rural health centres in district administrative centres which will be upgraded to rural hospitals. Table 28 shows that 1,284 of the projected 1,406 primary level facilities are planned for the rural areas.

The table shows that 92 district rural health centres will be developed by rehabilitation of existing facilities. The rehabilitation will include the provision of maternity facilities. The staffing pattern (Table 25) of this type of unit provides for the additional personnel needed to take part in district mobile supervisory teams. As in the case of rural hospitals, two vehicles will be allocated to these health centres for outreach activities. In the rehabilitation process, priority will be given to these health centres in district administrative centres, especially in the few priority districts that will not have rural hospitals.

Outside the district administrative centres, rural health facilities should be located according to criteria of population density, transport links, and economic importance. Even units identified here for 'rehabilitation' may sometimes be reconstructed elsewhere if circumstances dictate it (the difference in building costs between rehabilitation and construction will not be great where - as is usually the case - facilities are seriously damaged or deteriorated). The location of units will take into account any new agglomerations of people which have resulted from the camps for the displaced population. Non-district rural health centres will be located preferentially in subdistrict administrative centres.

Table 28 Rehabilitation of the health service network at the primary level in the medium term[a]

	Rural areas				Urban areas	
	Health centres[b]		Mini health centres	Village health posts	Health centres	Mini health centres
	District	Other				
Average number of personnel per facility[c]	17	11	4	1	20	4
Number of facilities:						
- to be rehabilitated	92	81	-	450	38	-
- to be upgraded from a health post	-	-	509	-	-	48
- to be built from new	-	-	152	-	-	36
Total	92	81	661	450	38	84

Notes. (a) The target is to complete this rehabilitation by the year 2000. Some work is already in progress.
(b) Priority will be given to the rehabilitation of district health centres, especially those in government priority districts.
(c) See Table 25.

The strategy allows for the rehabilitation (or reconstruction) of 81 rural health centres outside district administrative centres (Table 28). This is the number of such facilities currently and, in the medium term, it should provide for reasonable coverage of rural areas with high population density. The staffing pattern of this type of health centre is shown in Table 25. The rehabilitation will include the provision of maternity facilities and a vehicle for outreach activities in the catchment area.

The policy of transforming health posts into mini health centres has been explained. On average, a mini centre will have three professional staff (Table 25) to deal respectively with curative care, preventive/promotive work, and mother and child health. The unit will have maternity facilities and 2-4 general observation beds. Like other health centres, it will be responsible for a defined catchment area and the unit will be provided with motorbicycles (or bicycles) for outreach activities in the community. Table 28 shows that 509 rural health posts will be upgraded to mini health centres.

In addition to health posts serving residential areas, the national health service has operated 188 posts attached to work places. These work-related health posts are in the process of being transferred out of the public service to the ownership of the respective enterprises and it is expected that this process will be completed in the near future. In order for the national health service to stay with the same number of primary level units as before, the strategy allows for the construction of 188 new mini health centres. Table 28 shows that 152 of these new mini centres have been allocated to the rural areas, making a total target of 661 rural mini health centres for the rehabilitation period.

Available data indicate that there are about 450 village health posts. The strategy allocates some government funds to support the rehabilitation of these posts. They will be operated typically by one health worker of the elementary grade (Table 25).

Rural District Health Management and Supervision

It has been stated already that the district is the basic unit of health service delivery in the rural areas and that it will be necessary to increase the skills of personnel at the district level in planning, management, programme development and implementation, and support and supervision of primary level facilities. The main responsibilty for support/supervision of rural primary services will pass to a specialised mobile team based at the district level. The personnel and vehicles for such a team have been included in the resources allocated to the rural hospitals and health centres located in the district administrative centres (see above), but it will

be up to the district health directorate to decide to what extent the team remains attached to the district health facility or works more directly under the control of the directorate itself. Other rural health centres will continue to supervise health posts/mini health centres in their respective catchment areas.

Instruments will be developed to support district health management including job descriptions, working routines, programme norms, supervisory checklists, and indicators to monitor progress in the functioning of the district health system.

Urban Primary Level Units

Given the constraints on the growth of public health expenditure, it will not be possible to expand the urban health services greatly in the medium term, even at the primary level. However, as has been mentioned, there are opportunities for increasing the efficiency of urban services, so that the quality of care can be raised and the volume of service increased without there being a proportionate increase in the consumption of resources. For example: primary level units are often underutilised in the afternoons and, with better organisation, the second half of the day could be used to provide additional outpatient sessions and/or outreach services in the community; a high proportion of adult urban patients suffer from chronic degenerative disorders and the development and use of diagnostic and therapeutic norms for these conditions would result in better and more cost-effective care.

Table 28 shows that the 38 existing urban health centres will be rehabilitated. This rehabilitation will include the provision of maternity facilities for all centres. The average staffing pattern of urban health centres is shown in Table 25. For the reasons discussed already, the 48 urban health posts will transformed into mini health centres; these will have the same facilities and staffing pattern as the rural mini centres. In addition, the urban areas will benefit from 36 of the new mini health centres to be built in substitution for the enterprise health posts; these new mini centres will be located mainly in periurban areas where the population has expanded with rural migrants. By the end of the rehabilitation period, therefore, there should be a total of 38 urban health centres and 84 urban mini health centres. If this were achieved by the year 2000, there would be one health centre or four mini health centres per 50,000 urban people.

Urban Hospital Services

The strategy allows for the physical rehabilitation of the existing urban hospitals, including the general hospitals of the City of Maputo (see above) and the larger provincial, central and specialised hospitals.

Beyond that, however, there is not yet a policy for the development of the urban hospital services. Staffing patterns and norms for the consumption of drugs and other operating items have not yet been defined for the different types of hospital in the context of efficiency considerations and economic feasibility. For this reason, in the expenditure projections which follow, the growth of recurrent costs of the urban hospitals has been left as a residual: that is, as (most of) the difference between the combined expenditure growth of the rural hospitals and the primary level of care, and the projected growth of public recurrent health expenditure as a whole. Much more work is needed, therefore, to arrive at a costed and feasible strategy for hospital development in Mozambique, including ways to increase and monitor the efficiency of hospital resource use. Such a strategy is needed both to improve the country's hospital services and to prevent the uncontrolled growth of urban hospital costs, which would undermine the development of priority services in the rural areas and at the primary level.

THE REHABILITATION STRATEGY: COSTS AND FINANCING

In this section the cost implications of the proposed rehabilitation strategy are examined. The investment costs of rehabilitating the public health system, and the recurrent costs of the system when it will function with the defined level of resources, are estimated. The potential contributions of different sources of finance are quantified and changes in the composition of international aid are proposed.

COST ESTIMATES

Sources and methods for estimating unit investment and recurrent costs are given in the methodological notes and more information is given in the footnotes to the tables which follow. The investment costs of facilities include provision for equipment and furniture and, for primary and secondary level units, means of transport for outreach activities and staff housing. The recurrent costs of rehabilitated primary and secondary level units cover the salaries of the defined staff and an adequate supply of drugs and other operating inputs, including those needed for outreach work and maintanance. The investment expenditures are expressed in US dollars, since it is expected that the major part of these costs will be financed by international aid. On the other hand, the recurrent expenditures are expressed in local currency, since the intention is to finance a growing proportion of these costs from national sources. All cost estimates are in prices of 1991.

Investment Costs

Table 29 refers to the rehabilitation of the health service network at the primary and secondary levels of care. It shows the different types of health facility defined in the rehabilitation strategy, the numbers of facilities identified for rehabilitation or construction, the estimated unit costs of investment, and the total investment costs involved. For these levels of care combined, the total estimated investment cost amounts to $210.4 million.

To complete the estimate of investment costs for the public health system as a whole, **Table 30** summarises the costs of the primary and secondary levels shown in Table 29 and adds those for rehabilitating provincial, central and specialised hospitals and training institutions.

The total cost of rehabilitating the public health sector in the medium term is estimated to be $278.9 million. If this rehabilitation were to be completed by the year 2000, the total would represent an average investment of

Table 29 **Estimates of investment and recurrent costs for the rehabilitation of the health service network at the primary and secondary levels in the medium term[a]**

(1991 prices)

Type of health facility	Number	Investment costs[b] ($ million)		Annual recurrent costs[b]	
		Unit costs	Total	Unit costs[c] ('000 contos)	Total (million contos)
Rural hospital	37	1.35[d]	50.0	292.6	10.83
Rural health centre	173	0.41[e]	70.3	63.4	10.97
Mini rural health centre	661	0.10[f]	66.1	18.6	12.32
Village health post	450	<0.01	1.0	0.9	0.42
General hospital	5	1.40[g]	7.0	461.7	2.31
Urban health centre	38	0.20[h]	7.6	118.1	4.49
Mini urban health centre	84	0.10[f]	8.4	28.0	2.35
Total	1 448		210.4		43.69

Notes. (a) The target is to complete this rehabilitation by the year 2000.
(b) Investment costs are expressed in US dollars because most of this expenditure will be financed by aid, while recurrent costs are expressed in local currency because an increasing proportion of that expenditure should be financed from national sources.
(c) Unit recurrent costs include provision for maintenance and outreach support and supervisory activities.
(d) Unit cost based on the rehabilitation of 20 existing hospitals at $1 million per unit and 17 hospitals for construction (in most cases by upgrading existing rural health centres) at $2 million per unit. The cost includes provision for equipment and furniture estimated at 25 per cent of building costs; two vehicles at $30,000 each (including 22 per cent of cost for spare parts and maintenance); and staff housing.
(e) The unit cost includes provision for equipment and furniture estimated at 20 per cent of rehabilitation cost; two vehicles (see note (d)) for each of the 92 district health centres and one vehicle for each of the 81 other rural health centres; and staff housing.
(f) The unit cost includes provision for equipment and furniture estimated at 15 per cent of upgrading/construction cost; two motorbicycles (including 15 per cent of cost for spare parts); and staff housing.
(g) Unit cost based on the rehabilitation of four existing hospitals at $0.5 million per unit and one new hospital at $5 million. The cost includes provision for equipment and furniture estimated at 25 per cent of building cost and staff housing.
(h) The unit cost includes provision for equipment and furniture estimated at 20 per cent of rehabilitation cost and staff housing.

Table 30 **Estimates of investment costs for the rehabilitation of the health service network and training institutions in the medium term[a]**

(1991 prices: $ million)

Level/area/institution	Investment costs	% total
Rural primary[b]	137.4	49
Rural secondary[b]	50.0	18
Urban primary[b]	16.0	6
Urban secondary[b]	7.0	2
Provincial hospitals (7)	35.0[c]	13
Central and specialised hospitals (5)	25.0[c]	9
Training institutions (10)	8.5[c]	3
Total	278.9	100

Notes. (a) The target is to complete this rehabilitation by the year 2000. Some work is already in progress.
(b) See Table 29.
(c) Includes costs for equipment and furniture estimated at 25 per cent of rehabilitation costs.

$31.0 million per year. To put that figure in perspective, the investment health expenditure in 1991 was some $16 million. Thus to achieve by the end of the century the relatively modest level of rehabilitation involved in this strategy would imply a doubling in the availability of investment funds and an ability to absorb such funds at twice the present annual rate - in both cases a very considerable challenge.

Table 30 shows that 49 per cent of the projected investment costs are for the rehabilitation of rural primary level facilities and 18 per cent for rural hospitals. The primary and secondary levels of care in both rural and urban areas are projected to receive 75 per cent of the total investment costs. These allocations are thus in line with the stated priorities for the health sector.

Recurrent Costs

Table 29 also presents the estimated recurrent costs of the primary and secondary level facilities when fully rehabilitated and shows that the total recurrent costs of these two levels combined will amount to some 43.69 million contos per year.

To put this figure in perspective, it is necessary to compare it with the existing expenditure on these levels and relate the difference to the possible evolution of public recurrent health expenditure as a whole. An attempt to do this is made in **Table 31A.**

For the purposes of illustration, the table presents a scenario for the growth of public recurrent health expenditure based on two assumptions: that the present task of medium term rehabilitation will be completed by the year 2000; and that total recurrent health costs will grow in real terms at a rate of 4.5 per cent per year, which is the target agreed already between the government and the World Bank (see Preface).

As explained in the methodological notes, existing recurrent health expenditure could be disaggregated only incompletely and it has not been possible to divide existing expenditures exactly into the categories of levels of care and rural/urban areas used in the rehabilitation strategy (Tables 29 and 30). Instead Table 31A divides the public health sector into eight components, which were determined by the available data. These components correspond approximately to the categories of the rehabilitation strategy and they are adequate for the present purposes of examining the broad economic implications and feasibility of the rehabilitation policies and strategy. The components have been given titles which reflect the main types of health facilities represented.

Table 31A A scenario for the evolution of public recurrent health expenditure to the year 2000[a]

(1991 prices)

A. Expenditure projections

Sectoral components[b]	1991 Expenditure (million contos)	1991 %total	1991 Expenditure/ person (contos)	2000 Expenditure (million contos)	2000 %total	2000 Expenditure/ person (contos)	Average annual growth rate (%)
'Rural primary'	14.3	19		27.2	25		7.4
'Rural secondary'	6.5	9		11.3	10		6.3
Maputo City primary	2.8	4		3.4	3		2.2
Maputo City secondary	2.7	4					
Tertiary/quaternary (excluding CHM)	25.5	34					
Central Hospital of Maputo	10.9	15		69.0[c]	62		3.4
Training institutions	2.2	3					
Other[d]	9.7	13					
Total	74.6	100	4.6	110.9	100	5.3	4.5
Increase in real salaries of health workers				9.4[e]			
Grand total				120.3		5.8	

Notes. (a) Includes expenditure financed from all sources and includes costs of health programmes. The projections are based on two assumptions: that total public recurrent health expenditure will grow in real terms at an average rate of 4.5 per cent per year; and that the rehabilitation of the primary and secondary levels of the health network will be completed by the year 2000.

(b) See text for definition of components.

(c) Calculated as a 'residual'; see text for explanation.

(d) Includes MoH headquarters, provincial and district health directorates, maintenance and supply centres, National Institute of Health, central laboratories and other institutions.

(e) The figure shows the financial implication of an increase in the average real salary of health workers to a point midway between the present level and that which obtained at the beginning of the 1980s, assuming 17,000 health personnel in the year 2000.

The component 'rural primary' is composed mainly by rural health centres and posts, but includes also urban primary level facilities other than those in the City of Maputo. In the scenario presented, the rehabilitation strategy would result in an increase in the recurrent costs of this component from 14.3 million contos in 1991 to 27.2 million contos (in 1991 prices) in the year 2000, which would represent an average rate of real growth of 7.4 per cent per year. The share of this component of total recurrent costs would increase from 19 per cent in 1991 to 25 per cent in 2000, so the strategy would effect a shift in the distribution of health sector expenditure in favour of the primary level and the rural areas.

The component 'rural secondary' comprises mainly rural hospitals, but includes also the new general hospital for Nacala. The strategy would increase the recurrent costs of this component from 6.5 million contos in 1991 to 11.3 million contos (in 1991 prices) in the year 2000, which would represent an average real growth rate of 6.3 per cent per year. The share of this component of total recurrent expenditure would increase from 9 to 10 per cent, which would again be a change in expenditure distribution in line with stated health policies.

The costs of the component comprised by primary level facilities of the City of Maputo would increase according to the scenario from 2.8 million contos in 1991 to 3.4 million contos (in 1991 prices) in 2000, an average real expenditure growth of 2.2 per cent per year. This would result in a fall in the share of this component in total recurrent costs from 4 to 3 per cent (while the absolute increase in expenditure would allow for a reasonable improvement in the city's primary level services, as described above).

It was explained earlier that unit recurrent costs of rehabilitated tertiary and quaternary level hospitals have not yet been defined, and nor have they for training and other institutions or for general administration. It has therefore not been possible to make cost projections for these components of the health sector in the same way as for the primary and secondary levels. By way of a provisional resolution of this problem, Table 31A aggregates the components for urban hospitals, training and 'other' institutions and treats their combined expenditure growth as a residual: that is, as the difference between the projected growth in costs of the primary and secondary components (described above) and the projection for the growth of public recurrent health expenditure as a whole. The result is that the real expenditure of this 'residual', which is comprised mainly by the large city hospitals, would grow at an average rate of 3.4 per cent per year. This growth rate would result in a decline in the residual's share of total recurrent expenditure from 69 per cent in 1991 to 62 per cent in 2000, reflecting the shift in balance of

expenditure towards the lower levels of the care and the rural areas.

Despite the relatively low expenditure growth rate projected for the large urban hospitals, **Table 31B** shows that in the scenario the 'residual' (and therefore the hospitals) would consume nearly a half of the total growth of expenditure between 1991 and 2000; this is because the low growth rate is applied to high baseline costs. By contrast, the component 'rural primary' would benefit from 36 per cent of the total growth money and 'rural secondary' from 13 per cent of the total. Thus the providers and beneficiaries of the urban hospital services would have no cause to complain that the strategy neglects the need to improve the quality of urban hospital care.

The final result of this scenario is that total recurrent health costs would grow from 74.6 million contos in 1991 to 110.9 million contos (in 1991 prices) in the year 2000, which would be the consequence of applying the planned average growth rate of 4.5 per cent per year (Table 31A). This growth would represent an increase in recurrent health costs per person from 4.6 contos in 1991 to 5.3 contos (in 1991 prices) in 2000.

The scenario also foresees the possibility of an increase in the real salaries of health personnel. Table 31A illustrates the case of an increase in the average real salary by the year 2000 to a point midway between the present level and that which obtained at the beginning of the 1980s (see Table 9A). The calculation is based on the assumption that the total number of health personnel in 2000 will be 17,000. This increase in real salaries would imply an additional expenditure of 9.4 million contos (in 1991 prices) in the year 2000. If this additional expenditure were made, the result would be total recurrent health costs of 120.3 million contos (in 1991 prices) in 2000, which would represent an expenditure per person of 5.8 contos.

Drug Costs

Given the importance of medicines in health care and the need to import almost all drugs in use in Mozambique, it is useful to identify separately the drug costs foreseen in the rehabilitation strategy. **Table 32** gives an estimate of such costs in US dollars at 1991 prices, for the different elements of the health service network and the retail pharmacy outlets.

First, with respect to total drug consumption, it was shown earlier that in 1991 total drug costs amounted to an expenditure of $1.0 per person, which represented an availability of drugs per person about four-fifths of that which prevailed at the beginning of the 1980s. The rehabilitation strategy sets the target of closing that availability gap in the medium term. If this were to be

Table 31B **A scenario for the evolution of public recurrent health expenditure to the year 2000[a]**

(1991 prices: million contos)

B. Division of growth in expenditure

Sectoral component	Expenditure			% total expenditure growth
	1991	2000	Growth	
'Rural primary'	14.3	27.2	12.9	36
'Rural secondary'	6.5	11.3	4.8	13
Maputo City primary	2.8	3.4	0.6	2
Rest	51.0	69.0	18.0	49
Total	74.6	110.9	36.3	100

Note: (a) See notes to Table 31A.
Source: Table 31A.

Table 32 **Estimates of annual drug costs of the rehabilitated health service network and retail pharmacy outlets in the medium term[a]**

(1991 prices)

Type of health facility	Number	Unit costs ($'000)	Total costs ($ million)	% total costs
Rural hospital	37	67.42	2.49	9
Rural health centre	173	21.62	3.74	13
Rural mini health centre	661	6.75	4.46	16
Village health post	450	0.36	0.16	1
General hospital	5	134.00	0.67	2
Urban health centre	38	44.21	1.68	6
Urban mini health centre	84	13.45	1.13	4
Provincial/central/ specialised hospitals	12	NA	11.04[b]	39
Retail pharmacy outlets	-	-	2.82[c]	10
Total			28.19[d]	100

Notes. (a) The target is to achieve this level of drug expenditure by the year 2000.
(b) Calculated by difference; see text for explanation.
(c) Estimated as 10 per cent of the total.
(d) This level of drug costs in the year 2000 would represent the same real drug expenditure per person as prevailed at the beginning of the 1980s.

achieved in the time frame of the above expenditure scenario, this would mean that in the year 2000 real drug expenditure per person would be the same as that of two decades earlier. Table 32 shows that this apparently modest goal requires an expenditure on drugs in 2000 of $28.19 million (in 1991 prices) which, for the population projected for that year, would represent the expenditure of $1.36 per person (for comparison with Table 14, this value is equivalent to $0.80 per person in prices of 1980). Considering that the absolute figure of $28.19 million compares with that of $16.6 million spent on drugs in 1991, the seemingly modest goal for total drug consumption will not be an easy one to achieve.

The estimates of the drug costs of rehabilitated facilities at the primary and secondary levels (Table 32) were made as described in the methodological notes.

For the purpose of this calculation, a figure of 10 per cent of total drug expenditure (based on past experience) has been estimated for the costs of retail pharmacy outlets.

Then, in the absence of norms for drug consumption of the large hospitals, their drug costs have been calculated as the difference between the estimated costs of the primary and secondary level facilitites plus the retail outlets and the total projected drug expenditure. The result is that the drug consumption of the tertiary and quaternary level hospitals is estimated at $11.04 million. Given that in 1991 the drug costs of these hospitals were $6.67 million (not shown in the table), the scenario of completing the rehabilitation process by the year 2000 would result in a real growth of drug expenditure by the major hospitals of 5.8 per cent per year, which is above the estimated growth rate of the urban population. Thus again the rehabilitation strategy allows for an improvement in the quality of care by the urban hospitals.

Table 32 shows that in the strategy the rehabilitated primary and secondary level facilities are projected to consume 51 per cent of the total value of drug consumption, whereas the major hospitals are estimated to absorb some 39 per cent of the total value. Although the latter is still a considerable percentage, it represents a lesser concentration of drug consumption than at present: excluding the retail outlets for comparison with Table 20, the major hospitals are projected to be responsible for 44 per cent of drug expenditure by the health service compared with 51 per cent in 1991.

FINANCING STRATEGY

Investment Costs

As stated already, international aid should be devoted as far as possible to support for investment - rather than recurrent - costs, to minimise the degree to which the routine functioning of the health service is dependent on external assistance. It may be remembered that in 1991 the proportion of investment costs financed by international aid reached 91 per cent (see Table 16). In the financing strategy presented here, it is assumed that aid will fund 90 per cent of the investment costs of the rehabilitation programme. The government will be responsible for the remaining 10 per cent.

Recurrent Costs: Scenarios with and without a Social Security Health Fund

In many respects, it is more problematic to finance recurrent costs than investment expenditure. Unlike the latter, the former costs are - as their name states - recurrent and any increments to the volume or quality of health services are reflected in additional and cumulative costs. The adequate funding of recurrent expenditure is essential for the achievement of quality and efficiency in health services. Yet, for sustainability, this funding should be as far as possible national in origin.

The financing strategy must identify the means of funding the recurrent costs resulting from the rehabilitation process. According to the projections of the expenditure scenario (Table 31A), the task is to finance a total of 110.9 million contos (in 1991 prices) in the year 2000, which would represent an average real growth of costs of 4.5 per cent per year from the baseline expenditure of 1991.

Four possible sources of finance for the recurrent costs are identified here:

- government
- user fees
- a social security health fund
- international aid.

Two financing scenarios are presented, one which includes, and one which excludes, a social security health fund.

Scenario with a social security health fund

This scenario is shown in **Table 33A.** In it the estimate of finance to be raised by a social security health fund is based on the following assumptions (see methodological notes): a number of salaried employees in the public and private sectors of 500,000 in the year 2000 (which is probably an underestimate); an average monthly salary of these employees of 49.3 contos (in 1991 prices); and a contribution to the fund of 2 per cent of salary by both the employees and their employers. On this basis the table shows that a social security health fund could finance 11 per cent of the total recurrent health costs projected for the year 2000.

In this scenario with such a fund, government recurrent health expenditure would grow in real terms at an average annual rate of 4.5 per cent, which is the rate agreed indicatively by the government and the World Bank for the growth of public recurrent health expenditure. In this case, the proportion of total recurrent costs financed by the government would be the same in the year 2000 as in 1991, namely, 37 per cent.

Given the level of poverty in Mozambique, the scenario assumes that the maximum revenue to be expected from direct user fees would be 5 per cent of government recurrent health costs,* which would constitute 2 per cent of the total recurrent costs.

To finance the rest of the expenditure, international aid for recurrent costs would have to grow in real terms at an average rate of 2.2 per cent per year. In this case, the contribution of external assistance to recurrent cost finance would decrease from 62 per cent of the total in 1991 to 50 per cent in the year 2000. In this way the external dependency of health service activities would decrease in relative terms.

Employment-related insurance is a source of health finance that a growing number of developing countries are turning to, including in Africa, given the constraints on government health budgets. There are advantages in this scenario with a social security health fund. As Table 33A illustrates, such a fund can bring significant amounts of money into the health sector and take pressure off the government budget. Also, in contrast to the regressive nature of user fees, a social insurance fund is normally raised by payments which are at least proportional to salaries and it usually requires a contribution also from employers. A social security health fund does not exist presently in Mozambique, but it is a possibility that should be studied in the near

* This percentage is in accordance with experiences elsewhere in Sub-Saharan Africa (see 'User Charges for Health Care: a Review of Recent Experience' by A.L. Creese, WHO/SHS/CC/90.1, WHO, Geneva, 1990).

Table 33A Financing the growth of public recurrent health expenditure to the year 2000

(1991 prices: million contos)

A. A scenario including a social security health fund

Year	Total expenditure[a]		Sources of finance									
			Social security fund		Government			User fees		International aid		
	Expenditure	Average annual growth rate (%)	Expenditure	%total	Expenditure	Average annual growth rate (%)	%total	Expenditure	%total	Expenditure	Average annual growth rate (%)	%total
1991	74.6		0	0	27.9		37	0.9	1	45.8		62
2000	110.9	4.5	11.8[b]	11	41.5	4.5	37	2.1[b]	2	55.5	2.2	50

Notes. (a) See Table 31A.
(b) See text for explanation of estimate.

future. It could be integrated with the broader fund of the National Institute of Social Security, which would facilitate the collection of payments and reduce administrative expenses.

Scenario without a social security health fund

This scenario is shown in **Table 33B.** The contributions of user fees and international aid are essentially the same as in the previous scenario, since it is doubtful if significantly more income can be raised from user fees and the reduction of dependency on external assistance for recurrent costs is a priority.

To compensate for the lack of a social security health fund, government recurrent expenditure in this scenario has to grow in real terms at a rate of 7.3 per cent per year and the government contribution to total recurrent health costs would increase from 37 per cent in 1991 to 47 per cent in the year 2000. As before, the contribution of international aid to the total costs would decrease from 62 to 50 per cent.

It is clear that this second scenario puts more pressure on the government budget. Even so, it is not an impossible financing strategy. An estimate of real growth of GDP of 4 per cent per year in the post-war period would not be unreasonable (see Table 1). On this assumption, **Table 34** shows that, in the scenario including a social security health fund, government recurrent health expenditure in the year 2000 would constitute 1.6 per cent of GDP, a proportion similar to that in 1991 (see Table 4). On the other hand, in the scenario without a social security fund, government recurrent health costs in 2000 would be 2.0 per cent of GDP; although higher than in the first scenario, this proportion is still only half way towards the percentage (2.3 per cent) that obtained in 1981 (Table 4). In other words, the allocation of 2.0 per cent of GDP to recurrent health expenditure would not be without precedent and might well be accommodated by a 'peace dividend' after the war.

This level of government health expenditure can be looked at another way. Following the above assumption of GDP growth, it can be assumed that total government recurrent expenditure would also grow in real terms at 4 per cent per year. Then in the financing scenario with a social security fund, government recurrent health costs in the year 2000 would constitute 6.4 per cent of total government recurrent costs (Table 34), which is a proportion similar to that in 1991 (Table 4). On the other hand, in the scenario without a social security fund, the recurrent health costs in 2000 would be 8.1 per cent of total recurrent costs (Table 34); again, although higher than in the first scenario, this proportion is still only half way towards that (10.7 per cent) which obtained in 1981 (Table 4).

Table 33B Financing the growth of public recurrent health expenditure to the year 2000

(1991 prices: million contos)

B: A scenario without a social security health fund

Year	Total expenditure[a]		Sources of finance							
			Government			User fees		International aid		
	Expenditure	Average annual growth rate (%)	Expenditure	Average annual growth rate (%)	%total	Expenditure	%total	Expenditure	Average annual growth rate (%)	%total
1991	74.6		27.9		37	0.9	1	45.8		62
2000	110.9	4.5	52.6	7.3	47	2.8	3	55.5	2.2	50

Note. (a) See Table 31A.

Table 34 **Comparison of government contribution to public recurrent health expenditure in the year 2000 according to the scenarios with and without a social security health fund[a]**

(1991 prices)

Social security fund	Government recurrent health expenditure (million contos)	Average annual growth rate from 1991 (%)	% GDP[b]	% total government recurrent expenditure[b]
With	41.5	4.5	1.6[c]	6.4[c]
Without	52.6	7.3	2.0[d]	8.1[d]

Notes. (a) See Tables 33A and 33B.
(b) Estimates based on annual growth of GDP and total government recurrent expenditure from 1991 of 4 per cent.
(c) Percentages similar to those in 1991 (see Table 4).
(d) Percentages about midway between those of 1981 and 1991 (see Table 4).

Therefore, while the financing scenario with a social security health fund is advantageous, the scenario without a fund is also feasible.

Composition of International Aid

The change in the balance of external assistance for investment and recurrent costs implied by this financing strategy is illustrated in **Table 35**, which shows the estimated contribution of aid to the public health sector in the year 2000. Total health aid is expected to rise from $47.3 million in 1991 to $67.8 million (in 1991 prices) in the year 2000. The proportion of the assistance devoted to investment is projected to increase from 30 per cent of the total in 1991 to 41 per cent in 2000, while that to recurrent costs would decrease from 70 per cent in 1991 to 59 per cent in 2000.

Changes are also foreseen in the composition of the support for recurrent costs. The target for the import of drugs was shown in Table 32 and in this financing strategy it is assumed that international aid will fund 90 per cent of the projected drug costs of the public health service. On this basis, **Table 36** shows that the proportion of total recurrent cost support devoted to drug imports would increase from 49 per cent in 1991 to 57 per cent in 2000. It is also assumed that the proportion of recurrent health aid devoted to 'other consumable items' would remain at 10 per cent of the total (see Table 10). In this case, the proportion of recurrent cost aid allocated to technical assistance would decrease from 41 per cent of the total in 1991 to 33 per cent in 2000. It should be noted, however, that in absolute terms real expenditure on technical assistance is projected to stay more or less constant; if the procedures for the recruitment of expatriate health workers are improved as discussed earlier, these funds should be sufficient for the health service to obtain enough well qualified personnel to respond to its immediate needs.

In this way, using the various internal sources of finance and international aid, it is possible to fund the strategy for the rehabilitation of the public health sector of Mozambique in the medium term, with respect to both investment and recurrent costs.

Table 35 Estimate of contribution of international aid to the public health sector in the year 2000

(1991 prices: $ million)

Year	Investment costs		Recurrent costs		Total costs
	Costs	% total	Costs	% total	
1991	14.4	30	32.9	70	47.3
2000	27.9[a]	41	39.9	59	67.8

Note: (a) Estimate calculated as 90 per cent of projected average annual investment costs.

Sources: Tables 10, 16, 30 and 33.

Table 36 **Projected changes in composition of international aid in support of public recurrent health expenditure to the year 2000**

(1991 prices: $ million)

Year	Drugs		Other consumable items		Technical assistance		Total costs
	Costs	%total	Costs	%total	Costs	%total	
1991	16.1	49	3.3	10	13.5	41	32.9
2000	22.9[a]	57	3.9	10	13.1	33	39.9

Note: (a) Estimate calculated as 90 per cent of projected annual drug costs of the rehabilitated public health service network (derived from Table 32).

Sources: Tables 10, 32 and 35.

THE NEXT STEPS

This last section lists some steps which should be taken to carry the rehabilitation process forward. The steps are mainly to obtain official government approval for the policies and strategy outlined in this work and to establish or strengthen mechanisms of implementation.

1. The present document and the other outputs of PRANHP should be debated within the Ministry of Health and with other relevant ministries, in particular the Ministries of Finance, Cooperation, and Commerce, and the National Planning Commission. Official decisions should be made about the proposed policies for the health sector and the strategy for its rehabilitation. An official document incorporating material from all the outputs of PRANHP and other relevant documents should be published. The rehabilitation policies and strategy should be discussed with the donor community.*

2. A large part of the strategy presented in this work depends on the capacity of the Ministry of Health to control the allocation of resources according to the defined priorities, above all the division of resources by level of health care and geographical area. A study should be made of how to strengthen the mechanisms of planning, management and control of resource allocation in the health sector.

3. The strategy establishes broad lines for the rehabilitation of the rural health service network. It should now be filled out with detailed development plans at the provincial and district levels.

4. The urban health services, and above all the large city hospitals, have not yet been investigated in the same way as the rural health network. A study of these services should be performed as a step towards the production of a development plan for urban health care, including the establishment of hospital staffing patterns and norms for the consumption of drugs and other operating items, and thereby norms for overall recurrent costs. The development plan for urban health services should be made within the economic framework established in this document.

5. The National Directorate of Planning and Cooperation of the Ministry of Health should coordinate the work outlined in points 3. and 4. above and synthesise the products into a National Development Plan for the Public Health Sector.

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* Editorial note: The present document was discussed and approved by national and provincial health officials in a meeting held in the Ministry of Health in March 1993 under the chairmanship of the Minister. The document has been circulated widely in the donor community.

6. The ability to improve and expand the health services in the rural areas depends on the making of efficiency savings in the urban health services, which are relatively well developed and costly. Studies should be made of hospital management and efficiency in the wider context of the urban health services, including the efficient use of health centres and their links with the hospitals. The implementation of management and efficiency measures should be monitored with performance indicators.

7. The improvement in rural health services depends on strengthening the system of district health management. The instruments of a health management system (referred to earlier in this document) should be developed and personnel responsible for district management and supervision should be trained in their use.

8. The health services in the rural areas cannot be improved without the deployment of more health personnel there. A system of incentives for rural service (including staff housing, allowances, and priority in post-basic training) should be developed and implemented as soon as possible.

9. The health service cannot afford to waste investments made in buildings, equipment and vehicles. Appropriate systems of maintenance should be instituted at all levels of the service.

10. The considerable potential of employment-related insurance for generating revenue for the health service was shown in this work. The feasibility of introducing a social security health fund in the economic and social conditions of Mozambique should be studied.

11. The last, but not least, step relates to international aid, which will be a critical factor in the success of the rehabilitation strategy. The Ministry of Health should strengthen its capacity to negotiate proactively and creatively with the donor community. The National Development Plan for the Public Health Sector will facilitate this process, since the Ministry will be able to present well defined plans to donors. The Ministry should establish or strengthen mechanisms whereby it can discuss fundamental questions of cooperation policy with donors, with a view to increasing the 'value for money' of aid. Among the questions to be discussed are: the need to improve the system of recruitment of technical assistance personnel in order to obtain appropriate health workers at reasonable cost; and the need to increase the proportion of international aid in the form of untied budget support, which will improve the cost-effectiveness of the assistance and reduce the number of separate projects that the Ministry of Health must manage.

LIST OF TABLES

ACRONYMS

CHM	Central Hospital of Maputo
DAF	Directorate of Administration and Finance
DPh	Department of Pharmaceuticals
DRH	Directorate of Human Resources
DS	Directorate of Supplies
ERP	Economic Recovery Programme
FRELIMO	Front for the Liberation of Mozambique
GDP	Gross domestic product
GH	General hospital
IMF	International Monetary Fund
MCH	Mother and child health
MoF	Ministry of Finance
MoH	Ministry of Health
Mt	Metical
NA	Not available
NDPC	National Directorate of Planning and Cooperation
NPC	National Planning Commission
PRANHP	Project for the Revision of some Aspects of National Health Policy
RH	Rural hospital
US	United States of America