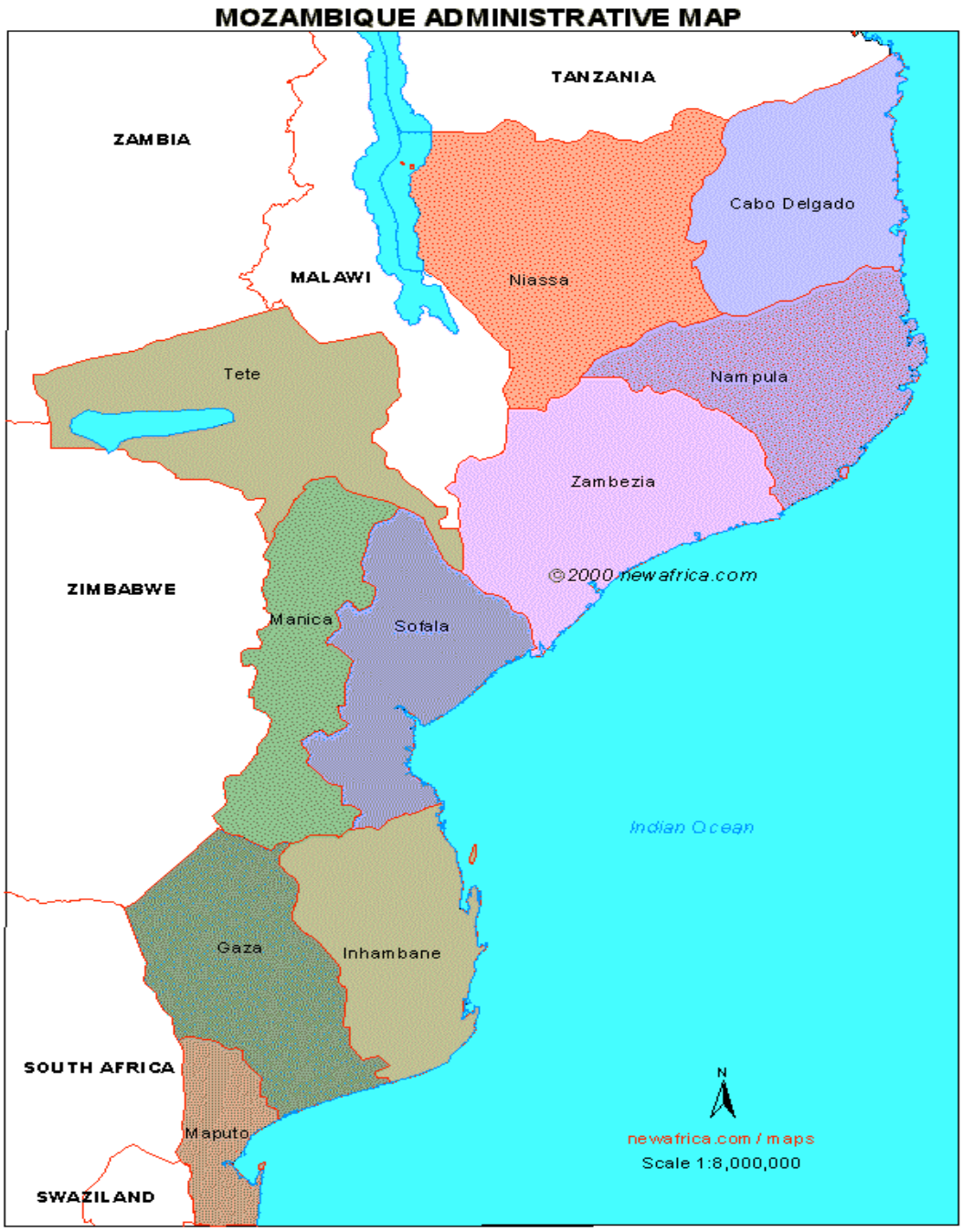
The Government of Mozambique

Ministry of Health

Expanded Programme on Immunization
Comprehensive Multi-Year Plan
(2007-2009)

Figure 1: Mozambique Administrative Map



Foreword

The Mozambique Extended Programme of Immunisation has, since its inception in 1979, been committed to the reduction of infant mortality and morbidity, by the constant provision of immunization services at all levels, to achieve the long-term objective of the reduction of vaccine preventable diseases. Considerable resources, both financial and human resources, have been invested in the building and development of a health system capable of reaching the entire population with a range of health services.

The EPI has, with the support of donor partners, continually strived to achieve high coverage rates and the introduction of new and underused vaccines has been fully supported by the Ministry of Health.

In 2002, the Ministry of Health, to comply with the GAVI requirement to secure additional funding, submitted a Financial Sustainability Plan covering the period 2002 to 2012. The FSP focused the Ministry of Health on the importance of the EPI programme and as a result, the Ministry has been supportive of EPI. The FSP also focused the EPI on areas where the programme needed improvement. Sustained efforts in the years 2003 onwards brought gains in coverage and programme management.

The Ministry of Health also supported the introduction of new vaccines. DPT HepB was introduced in July 2001, supported by GAVI funding until 2006. Mozambique intends to apply to GAVI for further support for the introduction of the Pentavalent vaccine in 2007 to further strengthen the effectiveness of EPI.

The comprehensive Multi Year Plan that follows strives to build on the gains of the FSP process by setting annual achievement targets to strengthen the EPI programme in the coming three years. The framework contained in the document provides a schedule of actions, which will be completed in 2007 and onwards to ensure the continued success and enhancement of EPI.

The Ministry of Health, donor partners and the Interagency Co-ordinating Committee have reviewed the document and pledged their support.

The Government of Mozambique extends their gratitude to their donor partners for their commitment to health provision over a wide range of health initiatives. Mozambique faces many challenges in health provision, and new devastating diseases such as HIV/Aids threaten to consume both lives and scarce health resources in the future. We look forward to your continued support as Mozambique strives to improve and achieve the challenging goals set out in the Comprehensive Multi Year Plan.

Executive Summary

This comprehensive Multi Year Plan (cMYP) has been completed as a requirement for extended GAVI support for the EPI through the Ministry of Health of the Government of Mozambique.

The Multi Year Plan contains a brief review of the country and the current economic situation. The organization of health services provision is outlined and a brief history of the EPI programme is provided.

A comprehensive review of all aspects of the EPI programme was conducted in April 2006 at district level. A thorough and critical analysis of the coverage, service delivery, vaccine supply and logistics, advocacy, surveillance and monitoring, programme management and the ability of the EPI to secure sustainable financing was conducted.

On completion of the situation analysis, an assessment of the Strengths and Weaknesses was conducted to determine how existing best practice could be maintained and where future management initiatives must be undertaken to enhance service delivery.

Using the Comprehensive Multi Year Planning Tool (cMYP) a full costing and financing of all aspects of EPI was conducted reviewing the cost of vaccines, personnel, transport, cold chain and the provision of shared services with a view to ascertaining estimated total cost for the period 2007-2009.

Analysis of current and future financing and the sustainability of the current activities of the EPI were assessed. The conclusion drawn is that the EPI at present is heavily dependant on donor support.

The final section sets out a comprehensive plan for 2007 setting out objectives and strategies for strengthening current service provision by increasing coverage, improvement of the cold chain, reducing dropout and provision of training for the introduction of the Pentavalent vaccine in 2007.

The comprehensive Multi Year Plan, which is aligned with Medium Term Expenditure Framework (MTEF) of Mozambique 2007-2009, sets out the priorities to strengthen EPI service provision at Central, Provincial, District and Health Facility levels. The cMYP will be the working document for the Ministry of Health and EPI management with the overall goal of achieving the Millennium Development Goals.

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ACRONYMS AND ABBREVIATIONS

AEFI	Adverse Event Following Immunisation
BCG	bacille Calmette-Guérin (tuberculosis vaccin
cMYP	Comprehensive Multi Year Plan
CDC	Communicable Diseases Control
CBOs	Community Based Organizations
DPT-HepB	Diphtheria, Pertussis, Tetanus Hepatitis B
EPI	Expanded Program on Immunization
FCH	Family and Community Health
FSP	Financial Sustainability Plan
FIC	Fully Immunized Child
GAVI/VF	Global Alliance for Vaccines and Immunization/Vaccine Funds
GIVS	Global Immunization Vision and Strategies
GDP	Gross Domestic Product
GNP	Gross National Product
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
Hib	Hemophillus influenzae type b
HMIS	Health Management Information System
ICC	Inter-Agency Coordinating Committee
IDSR	Integrated Disease Surveillance & Response
IEC	Information Education and Communication
IMCI	Integrated management of Child Illnesses
JICA	Japan International Cooperation Agency
MCH	Maternal & Child Health
MOH	Ministry of Health
MoND	Ministry of National Development

ACRONYMS AND ABBREVIATIONS

MNT	Maternal Neonatal Tetanus
NHL	National Health Laboratory
NIDs	National Immunization Days
OPV	Oral Polio Vaccine
PMBS	Pediatrics Bacterial Meningitis
PHC	Primary Health Care
PRSP	Poverty Reduction Strategy Paper
RED	Reach Every District
RH	Reproductive Health
SIAs	Supplementary Immunization Activities
STDs	Sexually Transmitted Diseases
SWAP	Sector Wide Approach Program
TT	Tetanus Toxoid
TNA	Training Needs Assessment
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WHO	World Health Organization
WPV	Wild Polio Virus

1 INTRODUCTION

1.1 Country Profile

Mozambique is located on the east African coast, and covers a total surface area of 799,380 km^2. It borders South Africa, Swaziland, Zimbabwe, Zambia, Malawi, Tanzania and the Indian Ocean. The coastline is about 2,500 km long from far north to far south (Figure 1). From the coast to the interior there lie successively the densely populated coastal plain, plateaus between 200 and 1,000 metres above sea level, and the highlands and mountains over 1,000 metres above sea level (IDSM, 1997). Administratively, Mozambique is divided into 11 provinces, which in turn are divided into 144 districts. Maputo city, which has provincial status, is also the country's economic and political capital. Of the 11 Provinces, the most populous are Zambézia and Nampula, which respectively have 20.34% and 19.47% of the Mozambican population. The average population density is 20 inhabitants per $Km^{2.}$ This varies from 35 inhabitants/km^2 in Nampula to 6 inhabitants/km^2 in Niassa. The female population is 52% (INE); the urban population (people living in the provincial capitals) is only 23% of the total, which means that the country is essentially rural (IDSM, 1997).

The country's population in 2005 was estimated at 19.4 million (INE projections based on the 1997 population census). According to the 1997 census, the current natural population growth rate is 2.4%. The proportion of people under 15 years old projected for 2001 is 44.5% of the population and the dependency ratio is about 90% (PESS, 2001), which means that the Mozambican population is essentially young, and more likely to consume than to produce, given the high percentage of dependents. In the last 10 to 15 years, there was massive displacement of the population to the cities because of the civil war between 1976 and 1992. The population settlements formed around the cities and towns remain, making adequate town planning and sanitation difficult (PESS, 2001).

1.2 Macro Economic Situation

The country's characteristics favour agriculture, the activity in which 70% of Mozambicans work (IAF, 96/97). The country's coastal location and its wealth of river basins favour artisanal and industrial fishing. The length of the Mozambican coast makes the country a natural corridor for neighbouring landlocked countries. The country is also rich in wild life and offers a natural environment advantageous for tourism. The Mozambican subsoil also offers natural resources such as coal and natural gas, which are exported to other countries in the region. Other documented resources

include heavy mineral sands (still to be exploited), precious and semi-precious stones and precious metals in limited amounts (PESS, 2001).

Since the signing of the peace accord in 1992, Mozambique has been making a tremendous effort to consolidate democracy and implement a comprehensive programme of economic reforms. The country's economic performance has been consistently robust, reaching and surpassing ambitious targets (MPF).

Despite these gains, Mozambique remains one of the poorest countries in the world with 69.4% of the population living below the poverty line (US$0.40 per day) (PARPA, 2001). Gross Domestic Product (GDP) per capita in 2000 was 210 US$ (PNUD, 2001). The incidence of poverty is higher in the rural areas (71.3%) than in the urban areas (62%). Absolute poverty in the country is the expression of a series of economic and social factors (low income, poor coverage of the health services and of potable water and basic sanitation, a high illiteracy rate, inadequate roads, lack of food security-malnutrition-among others) and results from the characterization of the current socio-economic conjuncture of the country (PRSP, August 2001).

Table 1: Macroeconomic Indicators of Mozambique

General		Water and Sanitation	
Population Millions 2006 (estimated on 1997 census)	20	Use of improved water source (%2003)	**36.6**
Child population (millions, under 18 years, 2006)	10	Use of improved sanitation (%2003)	**48.3**
Rank in human development index	168/177	Health and Nutrition	
GNP per capita (US$ 2004)	250	U5 Mortality Rate (per 1000 of live births, 2003)	**178**
GDP growth rate	7.5%	Infant Mortality Rate (per 1000 live births, 2003	**124**
Labour force (millions)	9.2	Maternal Mortality Rate (per 100.000 live births	**408**
Labour force by occupation Agriculture Industry Services	81% 6% 13%	One year olds immunised against DPT3 % One year olds immunised against Measles %	**72** **77**
Education		Vitamin A supplementation	**50**
Literacy rate % Male / Female	67/38	Under 5s sleeping under mosquito nets	**10**
Primary school attendance	63	People living below the poverty line (% 2002/2003)	**54**
Primary school children reaching grade 5	49	Children living below the poverty line (%2002/2003)	**58**
		Adult HIV prevalence rate (% 15-49yrs)	**16.2**

Source: UNICEF

1.3 National Health System

The health system in Mozambique consists of the public sector, the for-profit private sector, and the not-for-profit private sector. Of these, it is so far the public sector, which is the National Health Service (SNS), which is the main health service provider nationally. The SNS is organized into four levels of care. Levels I and II are the more peripheral levels intended to implement the Primary Health Care strategy (PHC) and to refer patients with clinical conditions that cannot be dealt with at level I, such as birth complications, trauma, medical and surgical emergencies etc. Levels III and IV are basically intended for more specialised curative action, and are the reference points for the levels immediately beneath them. Because of the war of destabilisation and of the current socio-economic conjuncture of the country, there is a chronic shortage of critical inputs for health service provision, which has a negative impact on the quality of health, particularly in rural areas (PESS, 2001).

As for health care provision by the not-for-profit private sector, this is essentially undertaken by foreign non-governmental organisations (NGOs) and by some religious bodies in agreement with the Ministry of Health (MISAU). Mozambican NGOs are developing gradually, and essentially undertake community health programmes in the areas of prevention, disease control and education and information. However, these partnerships have not yet been exploited to their maximum potential, particularly in the poorest regions (PESS, 2001).

In general, PHC remains the dominant strategy of health intervention to reduce the high rates of morbidity and mortality due to transmissible diseases, namely malaria, STD/HIV/AIDS, tuberculosis, leprosy, measles, diarrhoeal diseases and acute respiratory infections. The reproductive health problems associated with high rates of maternal mortality are also priority areas in the sector's programme. All these interventions in the framework of PHC are important components of the Action Plan for the Reduction of Absolute Poverty (PARPA) (PESS, 2001).

The epidemiological picture of the country is largely one of pre-transition, that is, it is dominated by transmissible, infectious and parasitic diseases, namely malaria, diarrhoeas, respiratory infections, tuberculosis, HIV/AIDS (rapidly spreading) among others (Epidemiology Office, MISAU, 1997).

The country records maternal mortality rates (TMM), regarded as the highest in the world estimated at 600-1100/100,000 live births (NV). The rates of infant mortality (101/1,000 NV), child mortality (153/1,000 NV) and the prevalence of chronic malnutrition (A/I < 2 Z score = 41%) as well as other social indicators are among the highest in the sub-Saharan region (IDS, 2003).

Mozambique is vulnerable to frequent outbreaks of measles, cholera, dysentery, meningococous meningitis, and bubonic plague. Precarious environmental conditions, particularly in urban areas, favour these epidemic outbreaks, as does the overpopulation of cities and towns caused by the settlement of people who migrated there looking for security during the 16 year war (PESS, 2001).

Despite this pre-transition epidemiological profile, there are data that indicate an increase in non-transmissible disease on a disturbing scale, such as traumas with various causes, notably those caused by traffic accidents, and chronic degenerative diseases (PESS, 2001).

This health picture is maintained and worsened by some determinant factors (PESS, 2001), including:

- Low level of schooling among the public in general and women in particular.
- Defective nutrition, particularly malnutrition and micronutrient deficiency.
- An environment that does not favour good health, particularly in the major cities, due in part to over-population, defective treatment of garbage and human waste, stagnation of storm waters, because of defective drainage, among others.
- Limited supplies of potable water.
- Regional disparities in access to and consumption of health care, among others (PESS, 2001).

Health Financing

Health sector expenditure for the implementation of National Health Service activities is financed either by the State Budget or by bilateral or multilateral donors. The Ministry of Planning and Finance (MPF) assigns funds to the health sector on an annual basis in accordance with revenue received, either from the State Budget or from families. Vaccines are purchased for the whole sector by the Pharmaceutical Purchasing Department which has a budget of approximately $80m. EPI % has consistently been at approximately 5% of total expenditure. External funds are channeled to the sector through international organizations or agencies. International agencies contribute more than half of

health sector expenditure (52%), the exchequer 22%, families 19% and civil servants around 7% (DNPO, 1997).

Generally speaking, the state budget's contribution to the health sector has grown significantly in real terms, because of the priority assigned to it by the Government.

1.4 The Mozambique Expanded Programme on Immunization

The Expanded Program on Immunization (EPI) was introduced in Mozambique in 1979, with the main objective of reducing mortality and morbidity from diseases that can be prevented by vaccination.

1.4.1 The EPI Mission, Goal and Objectives

The **Mission** of the EPI of the Ministry of Health of Mozambique is to enhance the lives of the people of Mozambique by protecting them from and striving to eliminate the suffering caused by vaccine preventable diseases.

The **Goal** is to protect all mothers and their children less than five years of age from vaccine preventable diseases, and by so doing, reduce infant mortality, morbidity, and disability, using the best vaccines and medical technologies and safety practices available.

The specific objectives to achieve these mission and goals are:

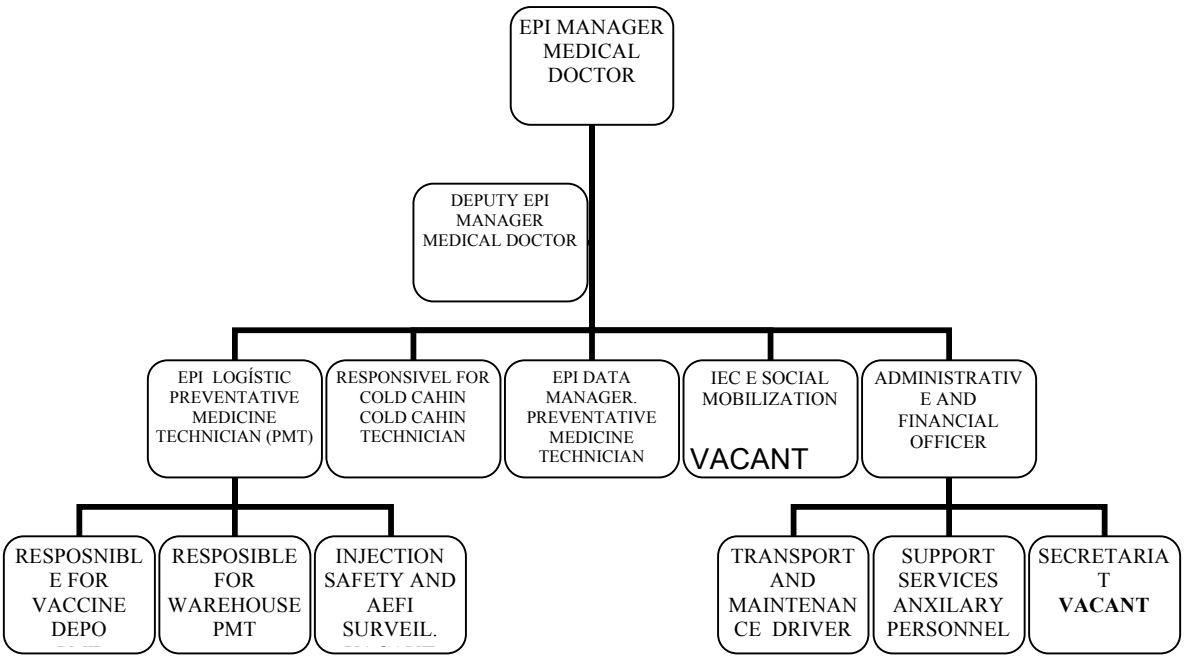
- To increase DPT-Hep 3 coverage to 75% in 2007;
- To reduce the dropout rate to less than 10% in the Central and Northern regions by 2008
- To phase the introduction of Hib-pentavalent vaccine in 2007 and achieve nationwide coverage of 78% by the end of 2008
- To replace 30% of the cold chain annually in 2007 and 2009

- To develop an EPI communication strategy (including strategies for hard to reach populations) and to strengthen interpersonal communication between health workers and caretakers
- To build and strengthen human resource capacity for EPI service delivery by 2008
- Maintain polio and measles control activities
- To maintain MNT elimination status

The MoH and the National EPI programme are committed to the achievement of these objectives.

The organization structure of the EPI programme is as illustrated in Figure 2.

Figure 2: Organogram of EPI



The programme focuses on children under one age and pregnant women and women of childbearing age. The schedule of antigens and timing are as specified in Table 2.

Table 2: Schedule of Antigens of EPI Mozambique

Vaccination for Infants			Women of child bearing age (15-49 years)		
Age	Visit	Antigen	Visit	Interval	**Antigen**
Birth	1	BCG, OPV0	1	0 (as early as possible)	**TT1**
6 weeks	2	DTP-HepB1, OPV1	2	4 weeks	**TT2**
10 weeks	3	DTP-HepB2, OPV2	3	6 weeks	**TT3**
14 weeks	4	DTP-HepB3, OPV3	4	1 year or subsequent pregnancy	**TT4**
9 months	5	Measles	5	1 year or subsequent pregnancy	**TT5**
6-59 months		**Vitamin A Supplement**		**All post-natal mothers**	**Vitamin A Supplement**

Source: MOH, EPI unit

Immunization services are offered in approximately 870 fixed Health centers, which represent 86% of health unities in the existing primary and secondary networks with fixed vaccination sites, an increase of 11 % between 2000 and 2004.

The targeted population for routine immunization and their respective percentage of the population estimated using the 1997 census assuming a growth rate of 2.4% is as per Table 4.

Table 3: Targeted population for antigens EPI 2006

Target group	% of total population	
Infants 0-11 months	4%	799,238
Children 0-59 [(a)]	17.3%	3,456,703
Pregnant women	5%	999,047
Non-Pregnant women	19.9%	3,976,208
Total Population in 2006*		**19,980,944**

*The estimated target for immunization for the next 5 years is as indicated in Table 4.

[(a)] Please note that according to the last update from National Institute of Statistic, under five children represent 17,1% of the population. In the table above, 17,3% was not changed to harmonize with what was stated in the 2006 JRF. In the table 4 bellow, because it represents actual and future information, it was updated accordingly.

Table 4: Estimated target population for EPI 2007-2009

Target population		Year		
		2007	**2008**	2009
Total population		20,366,795	20,854,057	21,350,008
Infants 0-11 months	(4%)	814,672	834,162	854,000
Under 5 years 0-59 months	(17,1%)	3,482,722	3,566,044	3,650,851
Population 6-59 months	(16%)	3,258,687	3,336,649	3,416,001
Pregnant women	(5%)	1,018,340	1,042,703	1,067,500
Women of childbearing age 15-44 years *	(24,9%)	5,071,332	5,192,660	5,316,152

*Women of Child Bearing Age include pregnant women. If these are taken out, then the percentage of WCBA will be 19,9%.

Immunization at fixed site facilities takes place every day. Due to the sparse population in the districts and the difficulty encountered in reaching health facilities in 2000 a new outreach strategy, named Monthly Health Days (MHD) was introduced departing from the health units and visiting the community. This strategy is currently carried out in 30 out of 144 districts. Conceptually, MHD involve a mobile team visiting a village or locality where they immunize children, administer vitamin A capsules, carry out de-worming and conduct health education sessions and meet with community members to help them analyze and find solution to health problems. However due to the expense involved and the lack of personnel it is not envisaged that this programme will be expanded in the immediate future.

Mobile teams from the district level cover remote rural areas. Routine immunization carried out by the

mobile teams and at the fixed vaccination sites is estimated to cover 75 to 80 percent of the Mozambican population.

5: Health facilities target population, coverage and drop out rates by province in 2006[2]

Province	No. of health facilities	Total Population	Target EPI pop nr	BCG	DTPHepB 3	Dropout rate
				%	%	%
Niassa	124	1.027.038	41.082	169	133	14
Cabo Delgado	96	1.650.271	66.011	123	95	7.1
Nampula	194	3.859.349	154.374	126	102	11.5
Zambézia	175	3.794.509	151.780	121	101	7.4
Tete	101	1.551.949	62.078	122	94	15.2
Manica	69	1.359.924	54.397	131	114	5.5
Sofala	137	1.676.133	67.045	107	90	24.1
Inhambane	104	1.412.349	56.494	124	115	4.1
Gaza	122	1.333.108	53.324	125	119	0.5
Maputo Province	162	1.072.087	42.883	66	80	1.1
Maputo city	42	1.244.227	49.769	70	70	6.3
TOTAL	**1326**	**19.980.944**	**799.238**	**116,7**	**101,2**	**1,3**

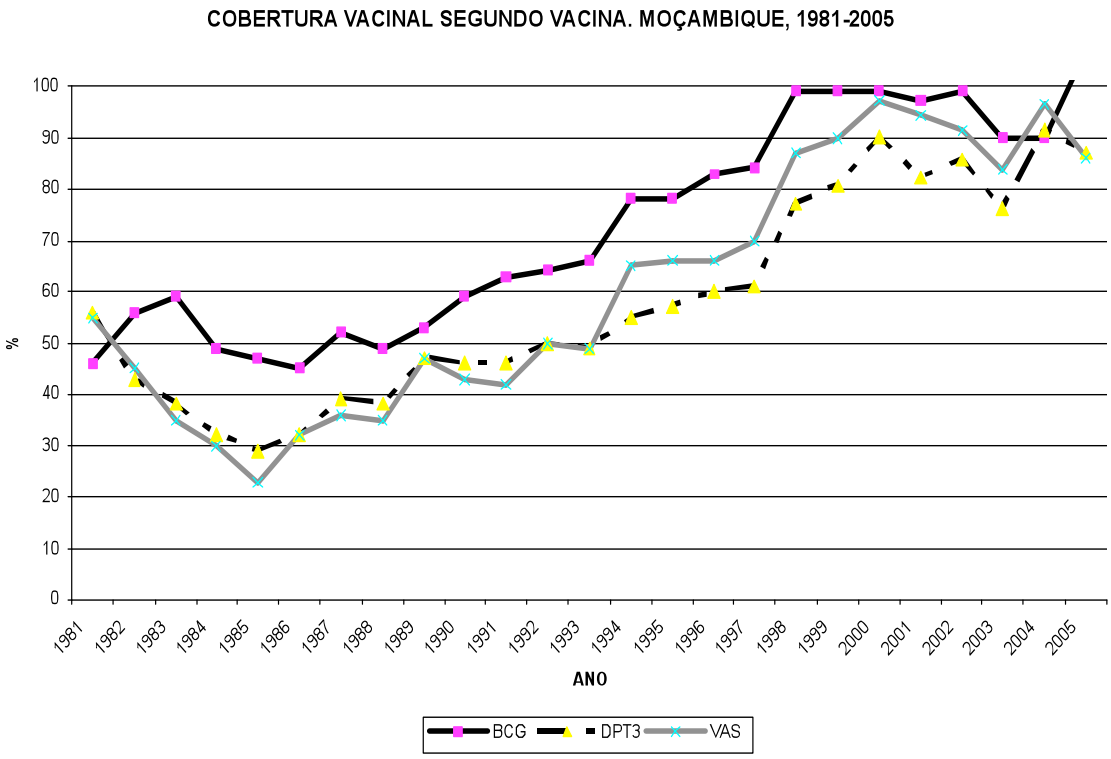
1.4.2 EPI Coverage and Dropout

Although administrative reports of immunization coverage tend to be rather high in Mozambique, DHS surveys show that between 1997 and 2003, immunization coverage for all major vaccine preventable diseases, namely polio, measles, tuberculosis, diphtheria, pertussis and tetanus, (fully immunized) increased from 47% to 63%. Meanwhile, TT2+ coverage increased from 29% to 57%. Singularly, the 2003 DHS reported coverage of 71.6% for DPT3, 69.6% for OPV3 and 76.7% for measles. Coverage is based on population estimates by district. Administrative reports are collated at central level. Though coverage rates have improved since the implementation since 2001, there are concerns about the reporting system and fluctuations in reported results.

According to administrative data, vaccination coverage for the vaccines given in the national EPI program increased from 50% up to very close to 90%, as shown in the graphic below.

[2] See discussion regarding coverage rate

Figure 3: Vaccine coverage per antigen, Mozambique, 1981-2005



Despite the progress seen between 1997 and 2003, the overall coverage is still low and is not equally spread throughout the country. Fully immunized coverage among one-year old children is 81 percent in urban areas and 56 percent in rural areas. Children from the poorest household have a 45% coverage compared to 90% of children from the best-off households. As with most of other child welfare indicators, children in Zambézia province are the most disadvantaged, with immunization coverage rate of only 45 percent. Lastly, 98% of children with a mother who have at least secondary school education are fully immunized versus only 49% of children whose mothers never went to school. Almost half of the provinces have consistently reported low immunization coverage on the average in the two surveys. This is the case for all Northern provinces of the country, including Zambézia and Tete provinces. Many districts in these provinces have communities that are very difficult to access with the existing health service infrastructure.

Meanwhile, the situation seems to have worsened between 2003 and 2005, according to the community survey for routine immunization held in December 2005, at the same time as the 2005 national vaccination campaign evaluation. When compared to 2003 DHS, it can be seen that most provinces, with the exception of Cabo-Delgado, which had its cold chain completely renewed and benefited from

a support programme to strengthen its EPI routine, have experienced a decline in their coverage for all antigens, even those provinces in southern district. For instance, Measles coverage decreased from very high levels of over 90% in 2003 to around 80% in 2005 in all four southern provinces. Meanwhile, DPT/HepB3 declined from above 90% to 83% and 75% in two of the provinces, namely Inhambane and Maputo city, respectively, with particular concern to the later that decreased by around 20%.

Making matter worst is the fluctuation in reported immunization coverage of many districts in the last three years. For instance, Lugela reported DTP/HepB3 coverage of 69.9% in 2003, 103.9% in 2004 and 82.9% in 2005. In other instances, the differences of coverage from one year to the following are too high without any clear explanation. Namacura district, for example, has reported DPT/HepB3 coverage rate of 77.5% in 2003, 101.6% in 2004 and 77.5% in 2005. Some districts seem to be missing all the previous gains. This is the case, for instance, of Milange, Mopeia and Gilé, whose coverage has been decreasing through 2003 to 2005 (see Table 1).

Efforts are being made to improve surveillance and strengthen reporting. In addition to the Ministry of Health employees involved in reporting WHO funds a surveillance office in each of the eleven districts. The comparison of the administrative data and survey data for 2005 are as presented in Table 6.

Table 6: **Coverage and dropout for DPT3 by province**

	Coverage DPT3 2005		Dropout rate 2005		
Province	**Administrative Data 2005 %**	**Survey Data 2005 %**	**Administrative Data 2006**	**Dropout DPT1 and DPT3 %**	**BCG and Measles %**
Niassa	79.3	55.6	135	18.9	24.4
Cap Delgado	93.1	88.6	97	8.9	19.3
Nampula	97.2	58.1	103	16.4	28.5
Zambezia	83.7	62.5	103	12.5	17.0
Tete	55.3	60.5	105	19.4	29.6
Manica	107.5	68.5	120	14.8	37.5
Sofala	80.3	86.3	91	8.7	29.2
Inhambane	86.5	82.9	115	12.9	13.3
Gaza	95.2	91.1	121	4.5	13.6
Maputo Province	55.3	91.1	81	4.8	19.3
Map Cidade	111.1	74.5	69	4.8	8.4
Mozambique	86.8	66.4	100	13.3	21.8

*Based on 2005 administrative data

As can be seen there are difficulties with coverage reporting as administrative returns indicate coverage well in excess of 100% for areas that are known to have low coverage. Returns in excess of 100% may be due to a combination of the following factors:

- Population estimates are based on the 1997 census, which was conducted just after civil conflict when large numbers of the population were displaced. The census itself was not complete due to administrative difficulties and all estimates for EPI are based on a growth rate of 2.4% as used by the Ministry of Planning and Development, which is responsible for disbursement of funds to the Ministry of Health. Budgets allocations are also population based.
- Inaccurate national data at all levels
- Vaccination services are intermittent in certain areas due to a lack of resources and community contact with health services may be sporadic. First contact may be at greater than the cohort age of 1 year.
- Inaccurate recording at the central level
- DQA carried out in 2002 indicated that EPI original data was not reliable and consequently the DQA assessment was not successful.
- EPI has been hampered by administrative constraints over which they have no control in their attempts to improve reporting and recording. A national level review of health system reporting is incomplete and not likely to be available for some time.

Survey data, though not as comprehensive, is considered more accurate as it is

- Conducted by National Institute of Statistics and EPI variables measured regularly.
- Cross sectional and longitudinal surveys reflect national situation more accurately than old census data.

Therefore, the coverage targets used in the cMYP financing and costing tool are based on a review of the survey data and administrative data for 2006, and future targets increases strive to achieve the GIVS goals. Wastage targets have been calculated using central stock records from EPI central stores coupled with the general experience for routine vaccine wastage based on the FSP and other country data. The wastage target of 5% was set for 1 dose liquid pentavalent vaccine.

The Hepatitis B component of EPI was introduced nationwide in July 2001, with the support of the Global Alliance for Vaccine Initiative (GAVI). Commitments for funding for DPTHepB by GAVI in

2007 amount to $3,016,000 (GAVI Ref letter - GAVI/06/408/aba/rl) However there is sufficient vaccine in country to cover the period January to October 2007 at which time the phased introduction of Pentavalent is planned. It is the intention of EPI to discuss with GAVI the reallocation of the funds to Pentavalent as the DPTHepB stocks had already been secured by the Pharmaceutical Procurement Department of the MOH from an alternative supplier.

Pentavalent will be introduced initially in the areas of greatest population concentration in selected districts where there are known to be adequate resources, good quality cold chain, and good reporting. In 2008, it is envisaged that Pentavalent will available in all districts replacing DPTHepB.

In addition, the injection safety policy was reviewed and AD (auto-destruct disposal) syringes became routine for the Expanded Program for Immunization (EPI) in year 2001. The programme also administrates TT vaccine to women of childbearing age (WCBA), especially to pregnant women. Overall, the EPI has made considerable progress in immunizing children and childbearing women.

1.4.3 Dropout

Dropout is a significant problem in many districts with an average dropout rate of 13%. dropout rate is still significant, between 6.8% and 17% (depending on the province), which limits further increase in coverage (DHS, 2003). The 2005 routine coverage survey conducted by Ministry of Health (MoH) found a dropout rate that ranged from 4.5% in Maputo province to 19% in Niassa, with a national average of 13%. Even when considering administrative data, most districts are reporting very high dropout rates. To give some few examples, Mocuba, Namacura and Pebane, reported increasing dropout rates from 2003 to 2005 (see Table 1), which means that they are increasingly missing children due to service quality issues.

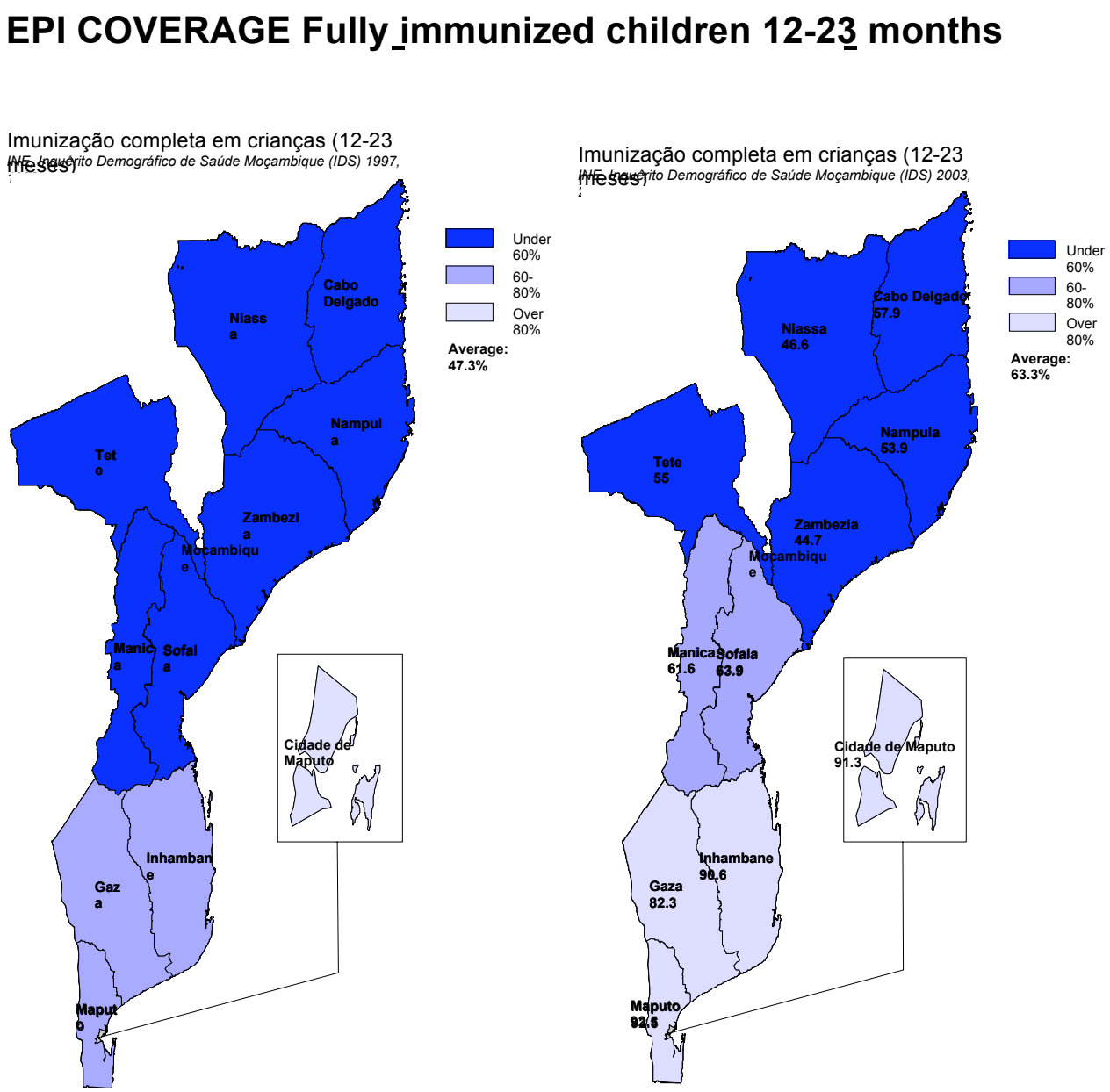
In addiction, dropout rates follow the same fluctuation pattern as the coverage rates. For instance, Lugela district reported a dropout rate of 30.4% in 2003, 12.8% in 2004 and 47.5% in 2005.

All these situations demonstrate that the quality of reported data from most of the districts is questionable. Even when the coverage reported in these districts is high, is doubtful that the coverage is truly high. For instance, as already considered above, data from Demographic Health Surveys conducted in 1997 and 2003 show that immunization coverage rates in almost half of the Mozambique

provinces, namely Niassa, Cabo-Delgado, Nampula, Zambézia and Tete, are consistently very much bellow the national average. Meanwhile, districts in theses provinces report very high coverage rates, in some instances even above 100%.

Vitamin A supplementation routine coverage remains very low, with only 57% of children having received at least one dose in 2004 and only 30% in 2005. A 2001 sero-study of vitamin A deficiency conducted by the MoH, found 69% of children aged between 6 and 59 months to be vitamin A deficient.

Figure 4: EPI coverage –Fully Immunized Child/12-23 Months



2.0 SITUATION ANALYSIS OF THE NATIONAL EPI PROGRAMME

A comprehensive review of the EPI programme was conducted in April 2006. The review methods included:

- Review of relevant documentation including previous assessments and surveillance data
- Visits by EPI management and external consultants to selected health facilities in all districts to assess staff knowledge and implementation of EPI procedures, check that proper procedures were observed in service delivery, and determine the effectiveness of the cold chain at the selected sites.
- Observations at the health facilities of waste management and injection safety

Having completed the Situation analysis, Areas of special interest were further examined, namely, Coverage and Dropout, Vaccine Management, Cold chain assessment, Injection Safety and Waste Management and Personnel issues. The findings of these are outlined below.

2.1 EPI Coverage

The main problems regarding coverage that were identified were as follows:

- Uneven coverage rate experienced in most regions of the country with Zambezi having the lowest rate of 45%;
- Fully immunized children were 82% for the urban population against only 46% for the rural settlements;
- Poor households had coverage rate of 45% compared to 90% for wealthy households;
- Coverage rate is also found to be related to educational status
- Children born to women with at least secondary education had 98% coverage compared to only 49% for the uneducated;
- Outreach is essential to improve coverage at provincial level;
- Low population density makes RED expensive but essential to increase the number of fully immunised children;
- Only 30% fixed vaccination units have transport to conduct outreach activities; and
- High dropout at district level also raised concerns.

2.2 Dropout

Dropout rate from the immunization programme is a cause for concern. The national dropout rate was 13% in 2003. Of the eleven provinces 8 have a dropout rate of >10%. According to the DHS, the dropout rate increased from 6.8% to 17% (DHS, 2003). The hardest hit is Maputo and Niasse where the dropout rates increased from 4.5% to 19%. In four of the Southern provinces, the measles coverage reduced from 90% in 2003 down to 80% in 2005. DPT3/HePB3 first reduced from 90% to 83% and eventually to 75% in two provinces. Vitamin A supplement, which was 57% for at least one dose in 2004, reduced to 30% in 2005. Consequently, Vitamin A deficiency rate for 6-59 months reported in the 2001 Sero-Study came to 69%.

2.3 Vaccine Management

In 2006, vaccines represented approximately 53% of total programme costs. The following observations were made regarding vaccine management:

- Vaccine management at central level is well organised with accurate records at central level
- Stock procurement is planned well in advance and there is good relationship with the Ministry of Health Pharmaceutical Purchasing
- Delivery of vaccines to the district level is efficient and timely
- Introduction of new vaccines has been facilitated efficiently by adequate transport and logistical support bundling of vaccines, AD syringes and safety boxes is standard procedure.

There is however, the following concerns regarding vaccine management:

- No stock management at the district level and therefore no accurate assessment of the actual doses used at Health facility level.
- Wastage levels are not known – given the expense involved per dose of new vaccines, wastage should be monitored and efforts to reduce wastage institutionalised to improve programme efficiencies. Wastage levels for the cMYP costing and financing had to be estimated from stock records.

2.4 Cold Chain Assessment.

Outdated cold chain and poor logistics contribute to the problems of EPI in Mozambique. Poor cold chain exists in almost all districts except one province, which benefited from complete refurbishment of its cold chain equipment. Knowledge of cold chain at all levels of health delivery system is low and the vaccine management assessment score in 2003 was only 58%. According to the EPI inventory check (MoH, 2003), out of 1,638 refrigerators, 1449 were functional. The average lifespan of a refrigerator was 15 years. The EPI review of April 2006 concluded that cold chain in most of the provinces are in need of significant investment in cold chain equipment and a review and logistics systems is required immediately.

A review of the national cold chain indicated the following:

- Adequate cold chain facilities at the Central level with continuous power supply and generator back up support
- Regional cold chain is inadequate particularly Nampula province where storage conditions are inadequate and require immediate capital investment.
- At district and health facility level vaccine management needs to be improved as it has been observed that

    - Vaccines are kept in poor conditions
    - Much of the cold chain at health facility level is old and unreliable and hampered by lack of spare parts
    - Temperatures are not recorded as specified
    - Stock records are inadequate
    - Vaccine Vial Monitor (VVM) discarding point not always observed

- Vaccine stock out occurring at health facility level due to cold chain failure thus reducing coverage and possibly increasing wastage.
- The cold chain system is also marred by lack of fuel for refrigerators.

2.5 Injection Safety and Waste Management

A 2004 injection safety assessment showed that there was no injection policy in place. Delivery of AD syringes and vaccine stocks in 91.4% of cases matched. It was also found out that 88% had safety box in the areas where injections were administered. Overflowing pierced and opened safety boxes were found in 10% of health units. Full sharp boxes waiting for disposal were found 8% of sites survey and disposal pits were found to be inadequately protected. The majority of health workers in charge of waste management did not know the existence of the national waste management policy. Most of them were found to be burning and burying as methods of waste disposal often in close proximity to the community. The 2006 EPI review indicated similar practices.

2.6 Disease Surveillance

The review also indicated that disease surveillance efforts were being hampered by poor quality data. Problems revealed were late submission of reports to national level, irregular update of stock ledgers, and lack of adherence to written procedures, poor feedback and poor documentation. It was also found that there was no policy in place for AEFI. In the cases where AFP or measles cases were found, no mop-up campaign takes place until confirmed laboratory results are available. Mozambique experienced three measles outbreak in the last five years with increasing numbers of people affected. Those most affected included less than 24 months (51%), non-immunised 9-24 (26%) and less than 9 months (3%). The proportion of previously immunised children affected (9-24 months) was only 10%.

WHO support disease surveillance in each district employing one officer per district at an annual cost of $165,000 and the related per diem expenses. Providing support in Polio reporting and the related activity is part of the additional duties provided in addition to surveillance.

2.7 Campaigns

Integrated campaigns for Measles, Polio and Vitamin A supplementation, which took place in 2005, reached over 8 million children less than 15 years of age, 4.3 million for Polio for under 5 years and 3.3 million for Vitamin A for 6-59 months. Polio coverage, according to 2003 DHS, was especially low in Zambezia and Niassa at 50% and 52% respectively. From the coverage evaluation survey, 94.4% of

children were reached due to the campaign. Measles case-based surveillance in 2006 revealed 122 suspected cases of which, 6 were positive, 9 Rubella and 5 undetermined. The follow-up measles campaign proposed for 2008 is expected to reach 3 million children less than 5 years and a total population of approximately 9 million. In terms of tetanus elimination, 26 cases of MNT were reported in 2005. There is a plan for tetanus campaign in 2007 for the women of childbearing age (WCBA) in the 15 high-risk districts funded by UNICEF (round one) of which was completed in October 2006. The future costs of national campaigns are likely to increase considerably due to significant increases in per diems sanction by government in 2006.

2.8 Human Resource Management

The April 2006 EPI review depicts the human resource base of the EPI programme as weak and without the requisite capacity to do the work of EPI effectively. Out of 594 EPI staff, 308 were agents and 286 were technicians. Future training needs have been assessed. However, insufficient training capacity exists to meet total HRM requirements. Training capacity is limited to a max of 432 staff per annum which is about half of the required number of personnel required. Lack of suitably qualified staff at all levels and difficulties in recruiting suitable personnel are exacerbated by emigration of qualified personnel. Training is also difficult given the country size and the limited transport and communications infrastructure available.

2.9 Social Mobilisation

The social mobilisation aspect of the EPI is almost absent except during campaigns. There are no personnel at central and other levels dedicated to social mobilisation of EPI in Mozambique. Consequently, no funds are budgeted for social mobilisation activities for EPI.

In the light of the above and in line with the Medium Term Eexpenditure Framework (MTEF) of Mozambique, the cMYP has been developed to improve the performance of immunization services in Mozambique over the next three years (2007-2009) by increasing vaccination coverage in all districts through improving cold chain and logistics, curbing dropouts, controlling unnecessary wastage and improving stock control. The cMYP aims to build on the achievements of the previous EPI plans over the past 27 years (1979-2006), and attempt to overcome the challenges. The main strategy to be used is Reaching Every District (RED) approach, adapted from the GIVS with the ultimate objective of contributing

to meeting the MDG Goal 4 of Reducing child mortality by 2/3 by the year 2015. EPI not being the only intervention area to achieving the above goal, the implementation of the plan, where possible will be synchronized with other Maternal and Child Health (MCH) and other interventions and take advantage of any potential synergies that could be reaped as a result. Some of these interventions include Vitamin A supplementation, Insecticide Treated Net (ITN) distribution, Child Survival initiative and some operational research. The resource needs of the plan are likely to be tapped from government of Mozambique, bi-lateral and multi-lateral donors. Due to the problem of getting long-term commitment on donor funding, the lifespan of this cMPY, in line with the MTEF, is limited to three years.

From the information gathered in the following were completed as per the Guidelines for the Completion of a Multi Year Plan the results are presented in the Tables that follow:

• Component of Multi Year Plan	**Tables**
• Situation Analysis of Disease Control Initiatives	**7.0- 7.4**
• An assessment of the Strengths, Weaknesses, Opportunities and Threats to the EPI programme was conducted.	**8.0-8.4**
• National Priorities, Objectives and Milestones were set for 2007-2009.	**9.0 -9.9**
• Strategies, Key Activities and Timeline for 2007-2009 were identified	**10.0-10.6**
• Annual Work Plan for 2007 was developed Tables	**18.0-18.6** **19.0-19.7**

2.10 Situation Analysis by Accelerated Disease Control Initiatives.

Table 7.: Situational Analysis by Accelerated Disease Control Initiatives, Mozambique, 2002-2006

Component	**Indicators**	National				
		2002	**2003**	**2004**	**2005**	2006
Polio	OPV3 coverage*	-	69.9	-	75.7	**-**
	OPV3 coverage**	-	73.1	-	-	**-**
	OPV3 coverage*	-	-	-	-	**-**
	OPV3 coverage**	85.7	89.6	89.8	87.8	**99.0**
	Proportion of districts with OPV3 coverage ≥ 80%**	-	70.8	72.2	60.4	**90,3**
	Proportion of districts with OPV3 coverage ≥ 80%*					
	No of AFP cases detected	92	134	110	118	**99***
	No of confirmed wild polio virus cases	0	0	0	0	**0**
	Non-polio AFP rate per 100,000 children under 15 years of age	1.2	1.6	1.3	1.3	**1.7**
	Proportion of districts with non polio AFP rate > 1 per 100,000	-	-	-	-	**-**
	Stool adequacy rate	42	75	91	85	**87**
	Proportion of districts with stool adequacy ≥ 80%	-	-	-	-	**-**
	NIDs/ SNIDs: **Number of rounds** **Coverage range**	**-**	**-**	**-**	**2** **94.4**	**-**

**Survey data, **Administrative data*

Table 7.1: Situational Analysis by Accelerated Disease Control Initiatives, Mozambique, 2002-2006						
Component	**Indicators**	National				
		2002	**2003**	**2004**	**2005**	2006
MNT	TT2 + coverage (pregnant women)*					
	TT2 + coverage (pregnant women)**	22.5	56.9	87.2	107.1	**65.0**
	Percentage of children protected at birth*	-	-	-	-	**-**
	Percentage of children protected at birth**	-	**-**	-	**-**	**-**
	No of neonatal tetanus cases reported*	-	-	-	-	**-**
	No of neonatal tetanus cases reported**	9/6	24/4	13/4	26/15	**15/8***
	Number of districts reporting > 1 case per 1,000 live births	-	-	-	-	**-**
	Was SIA conducted (Y/N)	**-**	**-**	**-**	**-**	**Y (15districts)**

**Survey data, **Administrative data*

Table 7.2: Situational Analysis by Accelerated Disease Control Initiatives, Mozambique, 2002-2006

Component	Indicators	National				
		2002	**2003**	**2004**	**2005**	2006
Measles	Measles coverage*	-	76.7	-	72.8	**-**
	Measles coverage**	91.4	96.6	93.6	87.3	**98.6**
	Measles coverage***	-	-	-	-	**-**
	Proportion of districts with measles coverage ≥ 90%*					
	Proportion of districts with measles coverage ≥ 90%**	-	82.6	77.8	60.4	**72.9**
	Number of outbreaks reported*	-	1 (Namp)	-	1 (Niassa)	**-**
	Number of outbreaks reported**					
	No of suspected measles cases reported	7,155	28,758	9,816	12,598	**170**
	No of confirmed measles cases	0	0	0	0	**4**
	Proportion of districts with at least 1 blood specimen collected per year	-	-	-	-	**-**
	NID/SID **Age group** **Coverage**	**-**	**-**	**-**	**1** **94.4**	**-**

Survey data, **Administrative data, * Campaign*

Table 7.3: Situational Analysis by Routine immunization system component, Mozambique, 2002-2006						
Component	**Indicators**	**National**				
		2002	**2003**	**2004**	**2005**	2006
Service delivery	National DPT3 coverage*	-	71.6	-	75.4	-
	National DPT3 coverage**	85.7	91.5	91.5	86.8	**100**
	% of districts with DPT3 coverage ≥ 80%*	-	77.1	78.5	59.7	**90.3**
	National DPT1-DPT3 drop out rate**	-	11.2	13.3	11.8	**9,6%**
	National DPT1-DPT3 drop out rate*	-	-	-	-	**-**
	% of districts with DPT1-DPT3 drop out rate > 10%	-	56.9	36.11	57.6	**60.4**
New vaccines	DPT/HepB*	-	71.6	-	75.4	-
New vaccines	DPT/HepB**	85.7	91.5	91.5	86.8	**100**
Vaccine supply, quality and logistics	National stock out of vaccines reported.	0	0	0	0	**0**
	If Yes, specify duration in months	-	-	-	-	-
	If Yes, specify which antigen (s)	-	-	-	-	-
Cold chain/Logistics	% of districts with adequate numbers of functional cold chain equipment	60	60	60	60	**60**
Advocacy, Social Mobilization and Communication	**Availability of national communication plan**	**0**	**0**	**0**	**0**	**0**

**Survey data, **Administrative data*

Table 7.4: Situational Analysis by Routine immunization system component, Mozambique, 2002-2006						
Component	**Indicators**	National				
		2002	**2003**	**2004**	**2005**	2006
Surveillance (Routine)	% of surveillance reports received completed and on time at the national level compared to number of reports expected	65	62.5	80.6	91.9	**84.3**
	Data Quality Assessment score	-	-	-	-	-
Programme management (ICC)	Number of ICC meetings held	-	3	4	4	**2**
Human resources availability	Number of health workers /vaccinators per 10,000 population	-	-	-	-	**8.475**
Financial sustainability	% of total routine vaccine spending financed using government funds. (including loans and excluding external public financing)	-	-	-	-	**-**
Linkage to other health interventions	Immunization services systematically linked with delivery of other interventions (malaria, nutrition, child health) established	N	N	N	Y	**N**
Management planning	Are series of district indicators collected regularly at national level? (Y/N)	Y	Y	Y	Y	**Y**
NRA	Number of NRA functions conducted	0	0	0	0	**0**
Waste disposal	Availability of a waste management plan	-	-	-	-	**-**
Immunization safety	% of districts that have been supplied with adequate number of AD syringes of all routine immunizations	100	100	100	100	**100**
Programme efficiency	Vaccine wastage monitoring at national level for all vaccine	0	0	0	0	**0**
	Timeliness of disbursement of funds to district and service delivery level.	**0**	**0**	**0**	**0**	**0**

2.11 Strengths, Weaknesses, Opportunities, and Threats by EPI component

Table 8: Strengths and weaknesses by Accelerated Disease Control Initiatives, Mozambique, 2006

Component	Strengths	Weaknesses
Polio Eradication **Measles control** **Neonatal Tetanus Elimination**	• **High coverage rate.** • **Possibility of integration with measles and vitamin A supplementation** • **Reach difficult to reach areas by routine immunization** • **Additional resources mobilized** • **Opportunity to train health workers** • **Social mobilization used to reach the community** • **Community and political leadership involvement was obtained** • **Experience in campaigns adopted in the routine immunization**	• **Coverage reduced after campaign** • **Poor information on the benefits of campaign led to low/reduced coverage** • **Poor recording of information** • **Problems of campaign schedule – occurred in the rainy season.**

Table 8.1: Strengths and weaknesses by EPI system components, Mozambique, 2006		
Component	**Strengths**	Weaknesses
Service delivery	• Programme well established and running since 1979 • There is committed staff at all levels • There is relatively high coverage given the country geography and terrain	• **High dropout - up to 19% in some districts. Greater than 10% in 8 out of 11 districts** • **Vaccine wastage not monitored** • **Inadequate staffing at the health facility level** • **Programme heavily dependent on outreach which is an expensive strategy** • **High incidence of EPI diseases associated to Hib**
Vaccine supply, quality and logistics	• Well-ventilated storage capacity at the central level • Continuous power supply with back up from an automatic generator. • Vaccine storage at recommended temperature • Vaccines and related injection safety materials (auto-disable syringes and safety boxes) supplied accordingly to the established schedule. • All provincial directorates have vaccines depots in adequate functioning conditions • Availability at all levels (central and provincial) of cold boxes, thermometers vaccine monitors necessary to keep vaccines •	• **Vaccine in Nampula province in the morgue of the Nampula central hospital in a bad hygiene conditions** • **In inadequate storage conditions** • **Vaccine temperature not monitors twice a day due to lack of thermometers in the refrigerators, spare parts for cold chain, bottles of water seen in the refrigerators** • **Stocktaking not done on a daily basis.** • **Vaccines store at temperature above 8 degrees Celsius** • **Reconstituted measles vaccine used in the next vaccination sessions and bacterian vaccines kept at freezing temperature.** • **Poor recording of vaccine stocks on daily basis at central and provincial l**evel. • **Cold chain technicians visit only 20% of districts once a month to maintain and repair cold chain equipment** • **Vaccine Vial Monitor (VVM) discarding point not observed** • **No stock records at provincial level coordinated with central level to monitor vaccine wastage** • **Difficulties by peripheral health facilities to go on outreach due to lack of transport, fuel and allowances**
Injection safety and waste management	• **Auto-disable syringes kept in safety boxes immediately after use, regularly collected, burnt and buried in pits** • **Injection practices generally safe at vaccine service delivery level**	• **In most health units, the pits are not adequately protected and are located in places of easy access to the communities.**

Table 8.2: Strengths and weaknesses by EPI system components, Mozambique, 2006		
Component	**Strengths**	Weaknesses
Advocacy, social mobilization and communication	• Intense social mobilization campaign with the active participation of community leaders, use of microphones, t-shirts during measles and polio campaigns • Minister of Health recommended the production and distribution of IEC materials for EPI tailored to community needs	• **Absence of IEC materials on routine EPI at all levels especially at health facilities** • **Limited use of mass media (TV, radio, newspapers) in routine message dissemination** • **EPI health education materials not adapted to local situation** • **No staff dedicated to social mobilization of EPI at central and provincial levels**
Disease Surveillance	• **Availability of disease surveillance manuals in all provinces** • **Updated EPI manual produced** • **Adequate disease reporting and vaccine register tools available at all levels** • **Surveillance reports available** • **AFP indicators met at national level** • **National laboratory capable of making the serological diagnosis of measles.**	• **Underreporting of surveillance data** • **Delay in sending data on the number of children immunized, wastage rate and communication activities from the provinces** • **No vaccination campaign even after the detection of AFP or measles cases before laboratory results available** • **No systematic analysis of coverage, cases and deaths due to vaccine preventable diseases at district levels** • **Weak integration between EPI, health information system and disease surveillance** • **Surveillance of adverse events following immunization (AEFI) not yet implemented**

Table 8.3: Strengths and weaknesses by EPI system components, Mozambique, 2006		
Component	**Strengths**	Weaknesses
Programme management		
(A) Training	• Basic training for staff at different levels of EPI programme • All staff trained on the technical operational and logistics aspects during campaigns • Provincial EPI staff and surveillance updated on different aspects of disease surveillance in April 2006	• **Few follow-up trainings held after the basic training of EPI staff** • **Non-existence of clear-cut career progression in the prevention medicine.**
(B) Supervision	• Supervision activities carried out at all levels during integrated measles, Polio and Vitamin A supplementation campaign	• **All planned supervisions not carried out at all levels** • **Absence of supervision reports in many health facilities and district directorates** • **No follow-up on the recommendations of available reports** • **Supervisory visits usually brief and in many instances do not take into consideration the main aspects of the EPI programme components** • **No periodic evaluation meetings between different levels of EPI programme** • **No adequate supervision from central level to other levels.**
Operational research	• EPI vaccination coverage survey conducted in 2005 to evaluate the national vaccination campaign and routine vaccination coverage	• **Non-existence of EPI policy for operational research**
	• **EPI, Family Health and Epidemiology & Disease surveillance all under Community Health department** • **All the essential EPI staff (i.e. EPI Manager, Logistician, Data manager, Cold chain technicians and Auxiliary staff) at central are all in one building** • **EPI managed by preventive medicine technicians in collaboration with programmes such as malaria, maternal health, child health and nutrition.**	• **Weak integration between EPI and disease surveillance, social mobilization, logistics and maintenance at the central level** • **Majority of health facilities and district health directorates without updated map**

Table 8.4: Strengths and weaknesses by EPI system components, Mozambique, 2006		
Component	**Strengths**	Weaknesses
Human resource capacity	• Dedicated staff at all levels • Needs estimates at the central level based on the population to be immunized without recourse to adjustments from previous years • Health facilities and districts go on outreach to school population and underserved population in remote areas (children under 1 year, pregnant women and women of child bearing age) • Majority of health facilities conduct immunization sessions daily in fixed vaccination posts	• **Insufficient staff numbers** • **Lack of adequately trained staff at all levels**
Sustainable financing	• **Financial support from government and international agencies**	• **Insufficient financial resources to implement EPI POA.** • **Resources from government alone too small to guarantee financial sustainability**

Table 9: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order priorit (By objecti
Service delivery				
1. Low routine immunization coverage rate (84% of districts in northern and central zone with < 60% coverage fully immunized coverage;23 districts in central zone with fully immunized coverage between 60% and 80%)	**(A)** To achieve and sustain high routine immunizationcoverage (children fully immunized)	**2007** : 70% national fully immunized coverage and at least 42% of districts with at least 80% fully immunized coverage. **2008** : 80% national fully immunized coverage and at least 76% of districts with at least 80% fully im	**By 2010 or sooner**, all countries will have routinr immunizationcoverage of at least 90% nationally with at least 80% in every district (GIVS 2005) **By end of 2009**, at least 80% of coutries will attain at least	1
2. 70% of districts with dropout rate higher than 10%	**(B)** To achieve a DPT-HepB1-3 dropout rate of < 10% in all districts by 2009	**2007** : At least 50% of the districts with drop out rates of < 10% **2008** : At least 80% of the districts with drop out rates of < 10% **2009** : All districts with		
3. Weak integration of vitamin A with routine EPI, especially in outreach activities	**(C)** Strengthen integration of Vitamin A supplementation with EPI in all delivery strategies and explore integration of other child survival interventions	Bring Vitamn A supplementation coverage very close or to the same level as Fully immunized coverage in all disticts	By the end of 2009, at least 80% of the countries will have integrated aditinal child survival interventions such as Vit A supplementation, ITNs, anti helminthics and others with EPI	1

Table 9.1: National Priorities, Objectives And Milestones, Mozambique 2007-2009 (continued)

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Service delivery				
High rate of diseases associated with Hib	**(A)** To begin introduction of pentavalent vaccine in the third quarter of 2007	**2007** : Cover 20% of the target population (30 districts selected) with pentavalent vaccine and achieve in these districts the same coverage level as that of the DPT-HepB 3 (at least 80%) by 2007 **2008** : Increase the coverage of pentavalent to the rest of the regions **2009** : Achieve target coverage consistent with current DPT-HepB3 coverage, of 90% nationally and and least 80% in ecah distric	By the end of 2009, at least 80% of countries will have introduced Hib vaccine into their national immunization programme	2
	(B) Conduct sero epidemiological study on hepatitis B	**2009:** National hepatites B sero-epidemiological study conducted	By 2009, 50% of countris will report results of hepatitis B sero epidemiological studies	3

Table 9.2: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Vaccine supplies, quality and logistics				
Lack of vaccine monitoring system, resulting in sock out / overstock of vaccines and overstock of injection safety supplies in many districts and health facilities, and lack of vaccine and other related supplies wastage monitoring system	**(A)** To establish a systematic vaccine wastage monitoring and stock management system by 2007	**2007** : Vaccine monitoring system and related supplies establisehed at all provinces and in at least 50% of the districts and health facilities, by intorducing the new EPI data collection tools; adequate vaccine and related supplies in all these districts a	By the end of 2009, all countries will have a vaccine monitoring system in place at all levels	1
		2008 : Vaccine monitoring system and related supplies establisehed at all provinces and in all districts and health facilities, by introducing the new EPI data colection tools ; adequate vaccine and related supplies in all these districts and health facil		
		2009: Keep and improve monitoring system as appropriate		

Table 9.3: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Vaccine supplies, quality and logistics				
Inadequate cold chain at regional and health facilities in 40% of districts	**(B)** To maintain adequate cold chain equipment functioning in all health facilities	**2007** : 100% of the cold chain equipment supplied with consumables (freezers, refrigerators and cold rooms)		1
	(C) Strengthen provincial capacity to keep cold chain functionng adequately	**2007** : Train 22 cold chain technicians and procure old chain spare spare parts at central level to supply them to all provinces adequately		
		2008: Central level to keep supplying provinces with adequate cold chain spare parts to enable them to keep their cold chain functioning adequately		
		2009: Central level to keep supplying provinces with adequate cold chain spare parts to enable them to keep their cold chain functioning adequately		
	(D) To strengthen the national cold chain system	**2007** : 30% of the ageid cold chain equipment (above 15 years) replaced (freezers, refrigerators and cold rooms)		
		2008: 60% of the ageid cold chain equipment (above 15 years) replaced		
		2009: 100% of the ageid cold chain equipment (above 15 years) replaced		

Table 9.4: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Vaccine supplies, quality and logistics				
Old and depleted transport fleet	**(E)** To improve vehicle and motorcycle maintenance and secure additional ones for the efficient running of the EPI programme	**2007** : 50% of all vehicles and motorcycles repaired, purchase 33 additional motorbikes and 4 cars 4X4 **2008** : 80% non-roadworthy vehicles and motorcycles replaced purchase 33 additional motorbikes and 4 cars 4X4 **2009** : Maintain 100 % of all EPI vehicles and motorcycles purchase 33 additional motorbikes and 4 cars 4X4		3
Poor waste management practices at peripheral levels	**(F)** To improve awareness and build capacity on good waste management practices at peripheral health facility levels	**2007** : produce and disseminate IEC information on good waste management practices and include in the training materail waste management practice module for staff atb health facility level **2007-2009** : Build at least 20 incinerators each year		2

Table 9.5: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Advocacy, Social Mobilization and Communication				
No national immunization advocacy and communication strategy in place	**(A)**. To develop and implement annual communication plans	**2007** : Annual EPI communication plan developed and start implementation		1
		2007 : EPI hard to reach communication plan developed and disseminated		
No EPI communication plan for hard to reach populations	**(B)**. Develop an EPI communication plan for hard to reach populations	**2007** : Produce and disseminate updated EPI routine IEC materials at all levels		
		2008 : Continue the implementation of EPI communication plan including the hard to reach one		
		2009 : Monitor and evaluate the EPI communication plan		
Monitoring and Disease Surveillance				
Lack of high quality disease surveillance at district level	**(A)** To achieve and sustain high quality AFP surveillance in all districts in terms of detection rate and punctual stool specimen collection	**2007** : At least 1.8/100,000 of non-polio AFP rate of under 15 year population in all provinces in order to achieve the national rate of at least 2/100,000	By 2007, all countries will achieve at least 2 cases of AFP notification per 100,000 childen less than 15 years of age	1
		2008 : At least 2/100,000 of non-polio AFP rate of under 15 year population in all provinces in order to achieve the national rate of at least 2/100,000		
		2009 : Maintain at least 2/100,000 of non-polio AFP rate of under 15 year population in all provinces and maintain the national rate of at least 2/100,000		

Table 9.6: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Monitoring and Disease Surveillance				
Lack of high quality Mesale surveillance at district level and Measles community based surveillance not in place	**(B)** To achieve and sustain high quality measles surveillance status, by integrating it in the already established AFP surveillance	**2007** : 80 % of the districts reporting at least 1 suspected measles case per 100,000 population; all these districts with Measles community based survbeillance establisehed and integrated in the AFP surveillance system	By 2010 or erlier, mortality due to measles will have been reduced by 90% compared to the 2000 level (GIVS)	1
		2008 : Increase the reporting rate and the integration of Measles surveillance into he AFP surveillance sytem to 85%		
		2009 : Maintain the performance level achieved in 2008		
Lack of high quality MNT surveillance cases and reorted MNT cases are not being studied by an expert committee	**(C)** To achieve and sustain high MNT surveillance and elimination status and advocte for an expert committee to study any single reported MNT case	**2007** : Community based MNT suveillance and reporting implemented in at least 60% of the districts; Less than 1 case per 1000 life births in all districts; Create an expert committee for MNT case study	By 2009, at least 80% of countries will achieve maternal and neonatal tetanus elimination	2
		2008 : Increase the commuity based MNT survaillance and reporting to 85% of the districts and maintain MNT rate of less than 1 case per 1000 life births in all districts; all MNT reported cases studied by an expert committee	By 2009, all countries will have established case based surveillance for neonatal tetanus	
		2009 : Maintain the achievements of 2008		

Table 9.7: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By
Monitoring and Disease Surveillance				
Poor routine analysis, monitoring and utilization of EPI coverage data ta operational level	**(D)** To strengthen capacity at operational level in analysis, utiliztion and timely submission of data	**2007** : Capacity building for data management incorporated in RED trainings		1
Delayed routine reporting from some provincs and districts	**(E)** Put in palce measures to deal with late submission of reports	**2007-2009** : measures to deal with late reportsin place at all levels		1
Lack of accurate target population data leading to understimation of coverage figures	**(F)** Advocate for utilization of most accurate population data estimates available in all districts and administratve posts, and form community based NGOs for monitoring EPI performance, while awaiting for the next population census due 2007	**2007** : All districts using the most updated and accurate population data available at district and health facility level **2008 - 2009** : All district will continue to use population data as in 2007 until data of the expexted 2007 census is ready and disseminated		3
No institutionalized system for monitoring AEFIs	**(H)** To establish a system for monitoring AEFIs	**2007** : Initiate the establishment of AEFI monitoring system in at least 30% of the districts **2008** : AEFI monitoring system in place in at least 75% of the districts **2009** : AEFI system in place in all districts	By 2009, all countries will report cases of AEFI from all distrcits	1

Table 9.8: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Policy, Planning and Management				
EPI policy in draft and not updated and widely disseminated Policy implementation guidelines non existent	**(A)** Update, finalize and disseminate EPI policy and implementation guidelines	**2007** : EPI policy updated and finalized and pocy implementation guidelines developed **2008** : EPI policy and implementation guidelines disseminated to all levels **2009** : Continue implementation of EPI policy		2
Under staffing of program at central and provincial levels	**(B)** Advocate for adequate staffing positions at central and provincial levels	**2007** : All key postions at central and provincial levels staffed		1
Weak program management at the health facility level; EPI at health facility level managed by health workers with no specific training in EPI	**(C)** Advocate for continued initial training of EPI specific personnel, while building management capacity of the existing staff	**2007 - 2009** : continue staffing districts and health facilities with EPI specific personnel (at least 120 initial traineers each year) for adequate program management at these leves, while continuing training peripheral health workers on RED and MLM (at l		2
Inexistence of EPI specific plans at health facility level	**(D)** Build capacity for deveopment of EPI specific plans at health facility level	**2007** : Capacity for development of EPI plans built in all health facilities of at lesat 35% of districts **2008** : Capacity for development of EPI plans built in all health facilities of at lesat 70% of districts **2009** : Capacity for development of EPI plans built in all health facilities of all districts		1

Table 9.9: National Priorities, Objectives And Milestones, Mozambique 2007-2009

Description of problem or national priority	Programme objective	Targets and Milestones	Regional and global goals	Order of priority (By objective)
Supervision and evaluation				
Irregular supervision from central to provincial level due to understaffing	**(A)** To adequately staff central level and strengthen participation in integrated supervision	**2007 - 2009:** At least 2 supervisory visits conducted per province, per district and per health facility each year to all levels		1
Irregular supervision from provincial to district level, and almost inexixtent supervision from distrcit to health facility level, due to lack of resources	**(B)** Provide adequate resources for provinces and district to conduct supervisory visits to lower levels			
Operational research				
Non existenoperational research for EPI	**(A)** Initiate operatinal research activities for EPI and conduct regular program review	**2007** : Conduct DQS and DQA assessments by December 2007 **2008** : Conduct vaccine management assessment **2009** : Conduct EPI program review		1

4. STRATEGIES, KEY ACTIVITIES AND TIMELINE, MOZAMBIQUE 2007-2009 MULTI YEAR PLAN

Table 10: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programe objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
Service delivery	Ensure that the unreached are reached in every district at least four time	Conduct micro-planning at the district or local level	April-July	x	x
To achieve and sustain high routine immunization coverage(children fully immunized		Reduce the number of immunization dropouts (incomplete vaccination) through improved management, defaulter tracing using community registers	Jan - Dec	x	x
		Develop and update supervisory mechanisms and tools	February	x	x
		Provide timely funding, logistic support and supplies for programme implementation in every district	March - Dec	x	x
		Maintain the existing national database of district	Jan - Dec	x	x
To begin introduction of pentavalent vaccine in the third quarter of 2007	Ensure effective and sustainable introduction of new vaccines and technologies	Integrate the introduction of pentavalent vaccine into Mozambique's cMYP	January	x	x
		Ensure adequate training of health workers and vaccine managers at all levels	September	x	x
		Include pentavalent in the logistics and reporting system	April - June	x	x
		Produce appropriate information, education and communication (IEC) materials to ensure good understanding of the benefits of pentavalent	April - June	x	x
		Ensure that within three years of introduction, the coverage of pentavalent reaches the same level as	Oct - Dec	x	x
		Expand surveillance of diseases preventable by new vaccines	April - Dec	x	x

Table 10.1: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programme objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
Vaccine supplies, quality and logistics To strengthen vaccine management systems at all levels	Improve and strengthen vaccine management systems at all levels	Achieve accurate demand forecasting at national and district levels to ensure the uninterrupted supply of assured quality vaccines , AD syringes and safety boxes	Jan - Dec	x	x
		Build capacity for effective vaccine management through training, supervision and the development of information systems	March - Dec	x	x
		Increase access and coverage through "safe chain" approach which includes taking vaccines beyond the cold chain, using a WM-based vaccine management	Jan - Dec	x	x
		Train health workers on documentation and record keeping, incorporetad in RED	April - June	x	x
		Procure 30 computers and their accessories per year	April - June	x	x
To strengthen the national cold chain systems	Strengthen cold chain system	Maintain existing cold chain equipment	Jan - Dec	x	x
		Replace 30% of aged cold-chain equipment every year for three years	July - Dec	x	x
To improve vehicle and motorcycle maintenance and secure additional ones for the efficient running of the EPI programme	Strengthen EPI transport system	Procure spare parts to maintain vehicles, motorcycles and bicycles	April - August	x	x
		Procure vehicles, motorcycles and bicycles to replace old units	April - August	x	x

Table 10.2: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programme objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
To improve injection safety practices	Network of incinerators and waste management system	Raise awareness of the importance of injection safety	May - June	x	x
		Train health workers on good waste management practices	May - August	x	x
		Print and distribute materials on good waste management practices	May - August	x	x
		Train health workers on safe injection practices	Jun - Aug	x	x
		Build incinerators and establish waste collection management system.	August - Dec	x	x
To begin introduction of Pentavalent vaccine (DPT-HepB+Hib) in 30 districts		Ensure adequate training of health workers and vaccine managers at all levels	September	x	x
		Include pentavalent in the logistics and reporting system	Jun - Aug	x	x
		Produce appropriate information, education and communication (IEC) materials to ensure good understanding of the benefits of pentavalent	Jun - Aug	x	x
		Distribute pentavalent vaccine and new child health cards containing pentavalent DPT-HepB+Hib to 30 selected districts	August	x	x
		Implement pentavalent vaccination in 30 selected districts	Oct - December	x	x

Table 10.3: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programme objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
Advocacy, Social Mobilization and	Assess the existing communication gaps in reaching communities and develop and implement a communication and social mobilisation plan	Develop national communication plan	March	x	x
To increase community demand for immunization	Engage community members, NGOs and interest groups in immunization advocacy, social mobilisation and	Schedule regular meetings with local assemblies and local leadership	April-May	x	x
		Schedule regular meetings with community members, NGOs and interest groups in immunization advocacy and implementation	April-May	x	x
	Engage theatral groups and the media in the dissemination of EPI related information	Provide resources to provinces and distrcits to for social mobilization activities envolving theatral groups and the media	March - Dec	x	x

Table 10.4: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programe objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
Disease Surveillance	Strengthen monitoring of coverage and case-based surveillance	Expand the existing surveillance systems (Polio, measles and MNT) in order to progress towards effective case-based surveillance of VPDs	March -	x	x
To achieve and sustain high quality AFP surveillance in all districts in terms of detection rate and punctual stool specimen collection		Improve coverage monitoring of vaccines and other linked health interventions	Jan - Dec	x	x
		Orientate Village Health Committees(VHCs) and traditional healers	April -	x	x
		Actively search for AFP cases	Jan - Dec	x	x
		Review AFP cases	Quartely	x	x
		Provide funds for the transportation of stool specimens	Jan - Dec	x	x
		Conduct polio SIAs		Midle 2008	
To achieve and sustain measles high quality measles surveillance status	Measles surveillance and control	Use available data of monthly suspected measles cases to identify areas that have circulation of measles virus	April -	x	x
		Procure laboratory supplies e.g. reagents	March -	x	x
		Conduct district based briefings for health workers	April -	x	x
		Carry out case investigation and intensify laboratory diagnosis of suspected measles cases.	February -	x	x
		Conduct measles SIAs		Midle 2008	

Table 10.5: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programe objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
To achieve and sustain high MNT surveillance and elimination status	Improve MNT surveillance	Identify high risk district/areas	October	x	x
		Investigate neonatal deaths with unknown causes	February -	x	x
		Sensitize Traditional Birth Attendants (TBAs)	March -	x	x
		Conduct district based briefings for health workers	April -	x	x
		Intensify active search in admitting hospitals	March -	x	x
		Line list all NNT cases.	March -	x	x
		Conduct SIAs for TT	March and September	x	x
To achieve and sustain high Hib surveillance status	Improve Hib surveillance	Expand sentinel sites for Hib	April - July	x	x
		Provide adequate supplies and staff training for lab Hib surveillance	April - July	x	x

Table 10.6: Strategies, Key Activities and Timeline, Mozambique Multi Year Plan, 2007-2009

Programme objectives	Strategies	Key activities	Timeline		
			2007	2008	2009
Programme management					
To improve EPI programme management at all levels	Capacity building	Conduct RED/MLM trainings	March - June	x	x
		Follow-up supportive supervisory visits on RED strategy implementation	April - Oct	x	x
Supervision, monitoring and evaluation	Supervision, monitoring and evaluation	Provide resources for provincial and district levels to cnduct supportive supervisory visits to lower levels	March - Dec	x	x
		Conduct supportive supervision to health workers at health facility level	March - Dec	x	x
Operational resaerch for better program management and delivery	Operational research	Conduct DQS and DQA assessments	June DQS November DQA		

5 COSTING AND FINANCING OF MULTI YEAR PLAN, 2007-2009

5.1 Costing and Financing Methodology for the Multiyear Plan

Having set National Priorities for 2007 the costing of future activities was completed using the standard user guide and tool for cMYP completion.

The Financial Sustainability Plan submitted to GAVI in 2002 was reviewed and used as a reference. The FSP proved of limited use in the provision of input data for the cMYP tool as non-standard excel models had been used in the initial submission.

Up to date macroeconomic data was provided by the Ministry of Planning and Development. The Ministry of Health provided salary scales and personnel data.

The EPI manager, using information gathered during a comprehensive review of EPI completed in April 2006, and his extensive knowledge of EPI structures assisted in the provision of detailed information on, coverage, vaccine management, cold chain, logistics and distribution, and campaigns management.

Given the short period for completion of the cMYP it was not possible to get some information on shared premises. As health facilities are used for all service delivery the % associated with EPI was deemed insignificant an as such shared cost of premises was excluded,

Standard programme inputs such as vaccines, injection materials and cold chain equipment were priced using the UNICEF price schedules though these items are not secured from UNICEF but procured by the Pharmaceutical Department of the Ministry of Health. The price differences are nominal and do not effect the overall accuracy of the results presented. Operational costs for routine and supplementary activities were based on past expenditure. Campaign costs for Polio and Measles in 2007 were assessed based on information provided about campaign activity in the 2005.

5.2 Programme Cost and Resource requirement for 2007-2009

Future costing and financing have been calculated for the period 2007-2009, as this is consistent with the budgeting period of the Ministry of Planning and Development, which is responsible for the disbursement of funds to all government departments based on plans and expenditure requirement drawn up by the individual departments.

The Programme costing is based on the following assumptions:

- Population growth of 2.4% per annum based on the census data of 1997
- Increased coverage target for traditional vaccines based on recent survey data which is deemed more reliable than district returns which have indicated coverage in excess of 100% in certain districts
- The phased introduction of the Pentavalent from October 2007 on depletion of current stocks of DTP/HepB.
- The Government of Mozambique will strive to achieve the Global Immunisation Vision and Strategy (GIVS) targets as set out by GAVI.

The data presented hereafter is based on the assumption of the introduction of the Petavalent vaccine to the EPI. Coverage in 2007 will be countrywide and all necessary preparatory activities will take place in order to allow for ease of distribution of vaccine from central stores and greater efficiency in ensuring appropriate staff training.

Table 11: Program costs future requirements 2007-2009

	Baseline year 2006	2007	2008	2009	Total	%
Grand Total	**$909.942**	**$13.481.373**	**$24.740.443**	**$20.355.735**	**$58.893.214**	**100%**
Routine (Fixed + Outreach)		$11.096.412	$16.058.241	$18.968.383	$46.438.698	79%
Campaigns	$564.942	$1.129.884	$7.327.365	$0	$8.457.249	14%
Capital costs	$345.000	$1.255.077	$1.354.837	$1.387.353	$3.997.266	7%

Table 12: Program costs and future resource requirements

Component	2007	2008	2009	TOTAL 2007/2009
	USD	USD	USD	USD
Vaccines and injection safety materials	5.164.822	8.507.420	12.709.748	26.381.989
Vaccines	4.220.547	7.753.072	11.742.709	23.716.328
Vaccines (6 traditional antigens)	1.464.792	1.212.617	1.310.784	3.988.193
Vaccines (new and under-used vaccines)	2.755.755	6.540.455	10.431.925	19.728.135
Injection material	944.274	754.348	967.039	2.665.661
				-
Personnel	2.588.747	2.650.877	2.714.498	7.954.122
Salary of EPI Staff	937.274	959.768	982.803	2.879.845
Allowances for out reach (include non EPI staff)	1.143.692	1.171.141	1.199.248	3.514.082
Perdiem for supervision	281.845	288.609	295.536	865.990
Staff shared cost	225.936	231.358	236.911	694.206
Transport	552.462	565.721	579.298	1.697.480
Fixed site vaccine delivery	116.308	119.099	121.957	357.364
Outreach	436.154	446.622	457.340	1.340.116
Maintenance of transport and equipment	440.118	450.681	461.497	1.352.296
Transport	189.231	193.772	198.423	581.426
Cold Chain	231.887	237.453	243.151	712.491
Other equipment	11.308	11.579	11.857	34.744
Building	7.692	7.877	8.066	23.635
Short-term training	671.906	726.031	743.456	2.141.393
				-
IEC/social mobilization	956.465	979.420	1.002.927	2.938.812
				-
Surveillance and monitoring	375.000	384.000	393.216	1.152.216
				-
Other recorrent costs	296.892	304.018	311.314	912.224
Overhead	29.385	30.090	30.812	90.286
Fuel/gas/electricity for refrigerators	267.508	273.928	280.502	821.938
Initiate new vaccine inroduction	-	1.438.873	-	1.438.873
				-
Operational research	50.000	51.200	52.429	153.629
Subtotal -- Operating costs	**11.096.412**	**16.058.241**	**18.968.383**	46.438.698

Table 12.1 Program costs and future resource requirements

Component	2006	2007	2008	2009	TOTAL 2007/2009
Campaigns		-	-	-	-
Polio Campaign (round I with meales)		-	-	-	-
Vaccines		-	1,338,783	-	1,338,783
Allowances for round II		-	400,000	-	400,000
Fuel for round II		-	200,000	-	200,000
Subtotal Polio	**0**	-	**1,938,783**	-	1,938,783
Mesales Campaign		-	-	-	-
Vaccines		-	1,224,298	-	1,224,298
AD syringes		-	331,098	-	331,098
Mixing syringes for Measles		-	33,110	-	33,110
Safety boxes		-	56,909	-	56,909
Operational costs		-	-	-	-
Soc Mob (includes OPV and Vit A)		-	1,000,000	-	1,000,000
Campaign implementation (incl OPVI round and Vit A)		-	-	-	-
Allowances		-	600,000	-	600,000
Fuel		-	200,000	-	200,000
Training and supervion at all levels		-	600,000	-	600,000
Subtotal Measles	**0**	-	**4,087,526**	-	4,087,526
TT Campaign		-	-	-	-
Vaccines and supplies	212,863	425,726	-	-	425,726
Operational costs	352,079	704,158	-	-	704,158
Subtotal TT	**564,942**	**1,129,884**	-	-	1,129,884
Vitamin A suplementation Campaign		-	-	-	-
Capsules		-	1,295,037	-	1,295,037
Scisours		-	6,019	-	6,019
Operational costs (included with Measles)		-	-	-	-
Subtotal Vitamin A	**0**	-	**1,301,056**	-	1,301,056
Subtotal Campaigns	**564,942**	**1,129,884**	**7,327,365**	-	8,457,249
Capital costs		-	-	-	-
Vehicles		152,000	217,286	222,501	591,787
Motorbikes 33/year		195,000	199,680	204,472	599,152
Refrigeratoration equipment 300/year	345,000	690,000	706,560	723,517	2,120,077
Computers (including laptops) 30/year		45,000	46,080	47,186	138,266
Incinerators - 30/year		98,077	100,431	102,841	301,349
EPI manual printing - 500/year		57,692	59,077	60,495	177,264
EPI tools printing		17,308	17,723	18,148	53,179
Develop, repoduce and distrib cold chain guidelines		-	8,000	8,192	16,192
Subtotal --Capital costs	**345,000**	**1,255,077**	**1,354,837**	**1,387,353**	3,997,266
Grand total	**10,141,170**	**13,481,373**	**24,740,443**	**20,355,735**	**58,577,551**

5.3 Program Financing From 2007-2009

5.3.1 Past Financing

The Government of Mozambique and the Ministry of Health have long recognised the effectiveness of EPI expenditure as a preventative intervention. Though EPI is a very small part of the total health system, it is well supported. Staff at all levels is committed to EPI and strong systems have been developed to ensure the timely procurement, delivery and surveillance of vaccination, which are supported by donor support. Government are still heavily dependant on donor support for all health expenditure but contribute 32% by payment of recurrent costs of personnel salaries and per diems, transport, cold chain maintenance and outreach services, which is costly in many districts due to the sparse population and distances between settled communities in less than hospitable terrain. Donor partners such as UNICEF, WHO, FDC, USAID, JICA contribute approximately 52% of total costs of health care.

Figure 5 Baseline Cost Profile (Routine only)

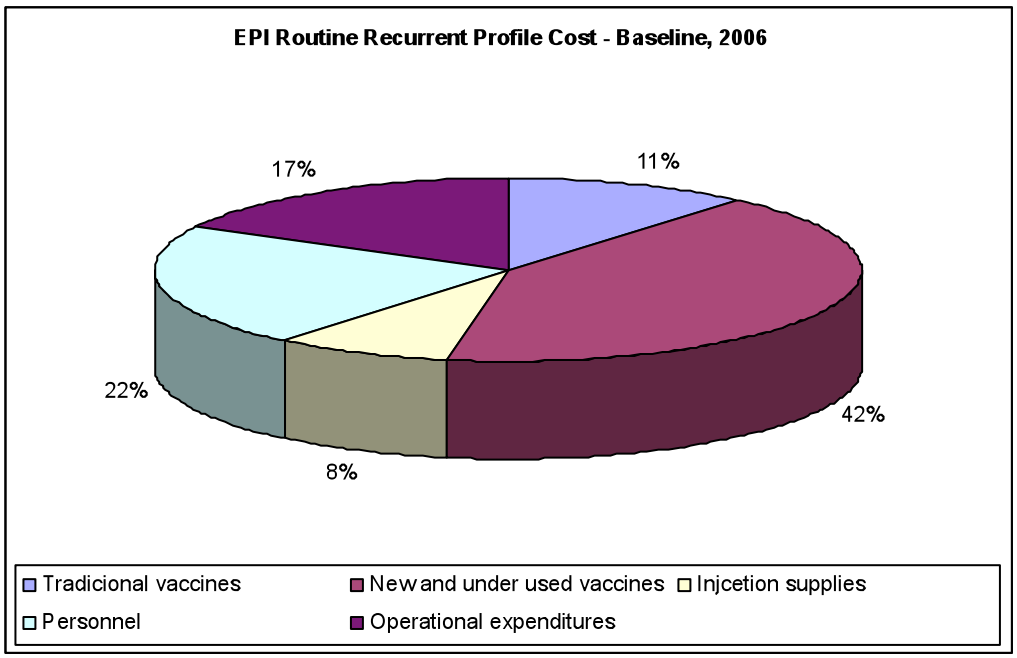


Table 13: Baseline cost profile

Tradicional vaccines	1,015,779
New and under used vaccines	3,852,554
Injcetion supplies	757,346
Personnel	2,007,624
Operational expenditures	1,597,925
Campaigns	564,942
Capital expenditures	345,000
Total	**10,141,170**

In 2006, total NIP expenditures amounted to USD 10,141,170, including TT campaign (round 1) and capital expenditures. Recurrent routine expenditures totalized USD 9,231,228 from which 42% was spent on tetravalent DPT/HepB vaccine. Meanwhile, vaccines and injection supplies represented together 61% of recurrent expenditures.

Government contribution to NIP in 2006 amounted to 3,780,749 representing 37% in relation to total NIP expenditures, and 41% in relation to recurrent expenditures. The Government paid for traditional vaccines, 100% injection safety supplies, including those for DPT/HepB (Government took over injection supplies in 2006, as promised in Annual Progress Report 2005) and personnel. Donors basically covered new vaccines, namely DPT/HepB, operational, capital and campaign expenditures.

5.3.2 Current Financing 2006

Impact of introduction of new vaccines on Programme costs

The incremental cost to the EPI of the in introduction of Pentavlent was assessed by manipulation of the coverage data using the cMYP tool. The impact on programme costs are significant as indicated in Table 14.

Table 14: Incremental cost of introducing Pentavalent vaccine in EPI

	2008	2009
PENTA	$5.548.000	$10.698.500
TETRA	$1.258.000	$2.604.200
INCREMENTAL COST*	$4.290.000	$8.094.300

* This scenario considers the introduction of tetravalent in 2008, in which case it is supposed that half cohort will receive tetra and another half, penta. If the whole cohort was to receive penta, the incremental cost would be 2 times higher.

Pentavalent introduction to the national EPI adds considerably to vaccine costs and is dependant on GAVI support, without which, funding from national government would not be feasible. The pressure on the pharmaceuticals budget due to other programmes requiring support such as HIV/AIDS and recent cutbacks in drug expenditures would effectively make it impossible for the MOH to commit to such expenditure without donor support. Also given the additional cost, it is important that wastage be minimised.

If we take into consideration that DPT/HepB wastage objective is estimated at 1.18 wastage factor (it is a liquid vaccine and can be used in subsequent sessions, so wastage should be minimised), then the incremental cost of adding Pentavalent will be even higher. For instance it would increase to USD 8,2 millions in 2007, USD 6,1 millions in 2008 and USD 8,7 millions in 2009.

5.4 Future Financing 2007-2009, Assessment of the Financing Gap and Sustainability Analysis.

Future resource needs and the donor support secured and probable is presented overleaf. As can be seen from the data generated by the cMPY financial tool vaccines make up a significant cost. Government and donors' commitments increase in 2.4% per year from 2007 to 2009.

Table 15: Future financing and funding gap

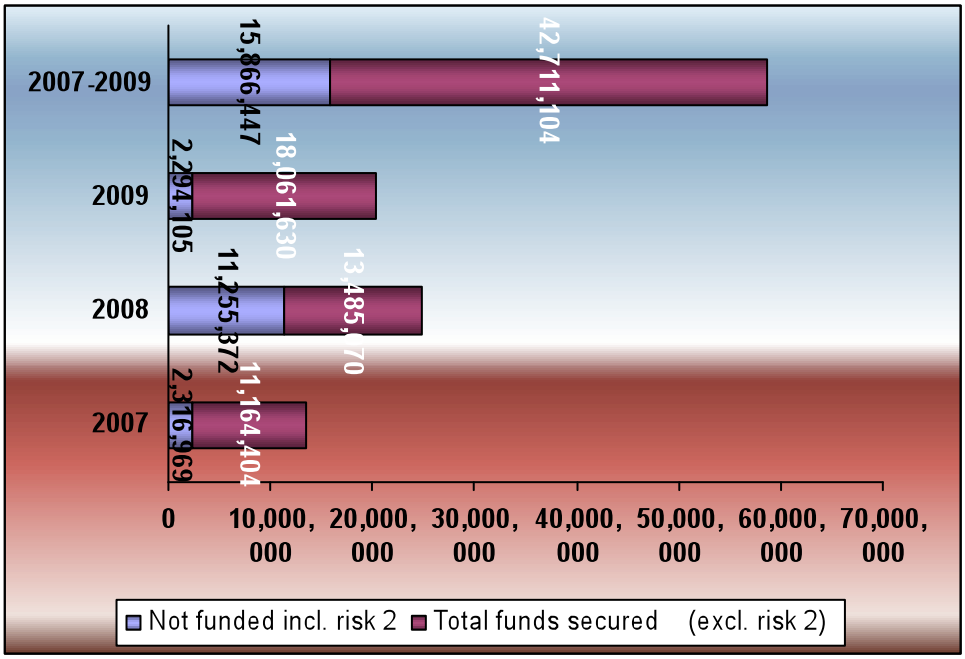
	2007	2008	2009	2007-2009
Gov Budget	4.872.283	5.133.584	4.828.719	14.834.587
GAVI	2.646.466	6.846.197	10.526.566	20.019.230
WHO	806.080	3.033.426	845.236	4.684.742
UNICEF	1.644.884	4.391.497	534.774	6.571.155
SWAP	874.452	1.295.439	890.715	3.060.606
FDC	805.430	824.760	844.555	2.474.745
JICA	80.000	350.000	350.000	780.000
Total EPI costs funded	**11.729.596**	**21.906.441**	**18.820.565**	52.425.064
Total cost	**13.481.373**	**24.740.443**	**20.355.735**	58.893.214
Not funded	**1.751.777**	**2.834.002**	**1.535.170**	**6.468.150**

Total costs increase due to the more expensive vaccines, a significant increase in per diem payments and increased investment. Though donor support is essential to the programme the government spending on personnel, per diem, make a significant contribution to service delivery. Sufficient support exists to ensure that routine programme is not at risk for the period under consideration.

Table 16: Secured funding and gap

	2007	2008	2009	2007-2009
Not funded incl. risk 2	2.316.969	11.255.372	2.559.105	16.447.110
Total funds secured (excl. risk 2)	11.164.404	13.485.070	17.796.630	42.446.104
Total Program cost	13.481.373	24.740.443	20.355.735	58.893.214

Figure 6: Secured funding and gap



Funding gaps are considerable at 17% of programme costs in 2007. The campaign for Polio, Measles and Vitamin A in 2008 and the introduction of new vaccine (pentavalent), which amounts at $ 7,327,365 and $ 1,438,873 respectively, not yet financed at all (risk 2), respond for 75% of the program gap. Without this campaign, unfunded costs would be of $ 3,928,007. If we consider that the country will be able to mobilize the necessary funds for introduction of pentavalent (in case it is approved), then the gap would further reduce to USD 2,489,134.

It is also important to note that gaps due to capital costs (unfunded + risk 2 funds) amount at $932,471, $1,098,408 and $897,962 representing 40%, 44% and 39% of total program gap in 2007, 2008 and

2009 respectively. In 2008, campaign and new vaccine introduction, which represent special moments, were excluded from this analysis. If they are taken into account, then the gap due to capital costs will represent 10% of total program gap in this year.

It should be noted, however, that values presented in the line "**Not funded incl. risk 2**" in **table 16** above, include risk 2 funds, which means that the gap may be lower if these funds are secured in the future.

The MOH has expressed its interest in strengthening EPI programme in Zambézia, Niassa and Tete provinces through a project of supporting EPI programme, similar to the one taking place in Cabo-Delgado and Nampula provinces, which includes the renewal of cold chain through installation of gas/electric refrigerators, transport for vaccines and other supplies distribution system and outreach, social mobilization and capacity building. These projects are to be implemented jointly by MOH and FDC/Village Reach in Zambézia and Niassa provinces, and MOH and JICA in Tete province.

Taking into account this interest and the fact that the needed funds are still to be raised (risk 2), programme costs and gaps will look as shown in table number 17 bellow.

Table 17: Funding and gap in scenario II (Tete, Zambezia and Niassa Investment)

	2007	2008	2009	2007-2009
Gov Budget	4,872,283	5,133,584	4,828,719	14,834,587
GAVI	2,646,466	6,877,735	10,302,606	19,826,807
WHO	806,080	3,033,426	845,236	4,684,742
UNICEF	1,644,884	4,391,497	534,774	6,571,155
SWAP	874,452	1,295,439	890,715	3,060,606
FDC	805,430	3,938,040	1,835,940	6,579,410
JICA	80,000	350,000	350,000	780,000
Total Program cost	**13,481,373**	**27,853,723**	**21,347,120**	**62,682,216**
Total secured funds	**11,164,404**	**13,485,070**	**18,061,630**	**42,711,104**
GAP	**2,316,969**	**14,368,652**	**3,285,490**	**19,971,112**

In 2008, the gap increases significantly due to integrated campaign, JICA and FDC investment for Tete, Zambézia and Niassa, all them being funds of risk 2 (not yet secured). Both projects continue in 2009 (maintenance phase) with less investment.

Table 18: Mozambique annual work plan for 2008

Objectives	Activity	Total budget (US$)	Funding	
Service delivery			**Funding**	**GAP**
	Provide vaccine and related injection safety supplies	$8,507,420	$8,507,420	$0
To achieve and sustain high routine immunization coverage (children fully immunized)	Conduct training on RED and micro-plan development at the district or local level	$150,000	$125,740	$24,260
	Reduce the number of immunization dropouts (incomplete vaccination) through improved management, defaulter tracing using vaccination register book and community registers	$96,920	$96,920	$0
	Develop and update supervisory mechanisms and tools, print and distribute	$15,000	$15,000	$0
	Provide timely funding, logistic support and supplies for programme implementation in every district - RED implementation	$2,194,088	$1,428,194	$765,894
	Supportive supervision to districts	$100,000	$70,000	$30,000
To achieve and sustain high routine Vit A and dewarming coverage in children and women in pos-partum	Integrate Vit A supplementation and dewarming with EPI in outreach sessions (Budget already included in RED activity implementation above)	$0	$0	$0
To begin intrduction of pentavalent vaccine and ensure that the coverage of pentavalent reaches the same level as coverage for routine	Introduction of Pentavalent vaccine (for detailed activities and budget, please see new vaccine introduction plan in the appendix Z)	$1,438,873	$275,031	$1,163,842
	All activities planned and budgeted for above, to achieve and sustain high immunization coverage	$0	$0	$0
Conduct integrated SIAs	Conduct measles SIAs (integrated with OPV and Vit A)	$4,087,526	$0	$4,087,526
	Conduct polio SIAs (integrated with Measles and Vit A)	$1,938,783	$0	$1,938,783
	Conduct Vit A SIAs (integrated with Measles and Vit A)	$1,301,056	$0	$1,301,056

Table 18.1: Mozambique annual work plan for 2008 – cont'

Objectives	Activity	Total budget (US$)	Funding	
Vaccine supplies, quality and logistics			**Funding**	**GAP**
To strengthen vaccine management systems at all levels	Build capacity for effective vaccine management through training and the development of information systems at provincial and district levels (introduction of vaccine management tools - VSMT & DVDMT)	$260.000	$227.000	$33.000
	Take vaccines beyond the cold chain, using a WM-based vaccine management	$0	$0	$0
	Procure 30 computers and their accessories	$46.080	$46.080	$0
To strengthen the national cold chain systems	Maintain existing cold chain equipment	$237.453	$237.453	$0
	Training of provincial cold chain technicians on cold chain maintenance	$28.500	$0	$28.500
	Introduction of cold chain inventory tool and training of national EPI logisticians on its use	$5.000	$0	$5.000
	Develop, reproduce and distribute a short technical guideline on cold chain for provincial and district use	$8.000	$0	$8.000
	Develop a national cold chain rehabilitation plan	$0	$0	$0
	Replace 30% of aged cold-chain equipment every year for three years	$706.560	$318.116	$388.444
To improve vehicle and motorcycle maintenance and secure additional ones for the efficient running of the EPI programme	Maintain of cars, motorcycles	$193.772	$13.500	$180.272
	Procure vehicles to replace old units	$217.286	$50.000	$167.286
	Procure motorcycles	$199.680	$160.400	$39.280
Overhead and other equipment	Overhead and other equipment	$41.669	$41.669	$0
To improve injection safety practices	Raise awareness of the importance of injection safety	$10.000	$10.000	$0
	Build incinerators and establish waste collection management system.	$100.431	$77.606	$22.825

Table 18.2: Mozambique annual work plan for 2008 – cont'

Objectives	Activity	Total budget (US$)	Funding	
Advocacy, Social Mobilization and Communication			**Funded by**	**GAP**
To increase community demand for immunization	Support production of social mobilization material	$63.015	$21.000	$42.015
	Engage community members, NGOs and interest groups in immunization advocacy and implementation	$10.000	$10.000	$0
	Engage media (radio and television and community radio) and teathral goups in the dissemination of EPI mensages	$435.499	$260.000	$175.499
	Train and involve community leaders, community activists and teathral goups in social mobilization for EPI	$273.329	$202.524	$70.805
	Assess the existing communication gaps in reaching communities and develop and implement a communication and social mobilisation plan	$20.000	$11.844	$8.156
	Procure social mobilization means (megaphones, amplifiers - mobile unities, bateries for megaphones and bateries chargers)	$177.577	$0	$177.577

Table 18.3: Mozambique annual work plan for 2008 – cont'

Objectives	Activity	Total budget (US$)	Funding	
Disease Surveillance			**Funding**	**GAP**
	Secure salaries for provincial AFP surveillance officers	$165.000	$165.000	$0
To achieve and sustain high quality AFP surveillance in all districts in terms of detection rate and punctual stool specimen collection	Expand the existing surveillance systems (Polio, measles and MNT) in order to progress towards effective case-based surveillance of VPDs	$0	$0	$0
	Orientate Village Health Committees(VHCs) and traditional healers	$30.000	$30.000	$0
	Actively search for AFP cases (including Measles and NNT cass)	$200.000	$200.000	$0
	Review AFP cases	$0	$0	$0
	Provide funds for the transportation of stool specimens	$20.000	$20.000	$0
To achieve and sustain high quality measles surveillance and elimination status	Use available data of monthly suspected measles cases to identify areas that have circulation of measles virus	$0	$0	$0
	Procure laboratory supplies e.g. reagents	$25.000	$25.000	$0
	Conduct district based briefings for health workers	$24.000	$24.000	$0
	Carry out case investigation and intensify laboratory diagnosis of suspected measles cases.	$25.000	$25.000	$0
To achieve and sustain high MNT surveillance and elimination status	Identify high risk district/areas	$0	$0	$0
	Investigate neonatal deaths with unknown causes	$15.000	$15.000	$0
	Sensitize Traditional Birth Attendants (TBAs)	$8.000	$8.000	$0
	Intensify active search in admitting hospitals (budget included above with AFP)	$0	$0	$0
	Line list all NNT cases.	$0	$0	$0
To achieve and sustain high Hib surveillance status	Expand sentinel sites for Hib	$7.000	$7.000	$0
To guarantee the optimal performance of the VPD surveillance system	promote quartely meetings with surveillanve officers to evaluat the performance of VPD surveillance	$30.000	$30.000	$0
Operational reseach	Conduct ooperational research for EPI to evaluate and improve program implementation	$50.000	$25.000	$25.000

Table 18.4: Mozambique annual work plan for 2008 – cont'

Objectives	Activity	Total budget (US$)	Funding	
			Funding source	GAP
Programme management				
Provide health workers with necessary tools to allow better program management	Assesment of MLM and RED Strategies	$10.000	$0	$10.000
	Reproduction and distribution of EPI manual	$59.077	$0	$59.077
	Reproduction and distribution of New EPI data colaction Tools	$17.723	$0	$17.723

6.0 IMMUNIZATION PROGRAMME ANNUAL WORK PLAN FOR 2007

Having conducted a thorough review of the EPI programme as recently as April 2006 with assistance of WHO the major issues hampering the key areas of coverage, drop out, programme, management, surveillance, cold chain and the personnel issues impacting on the effectiveness of EPI a SWOT analysis was conducted to identify and prioritise the major issues that need to be addressed over the period of the Comprehensive Multi Year Plan. National Priorities were identified and assed in the context of total health provision.

The Multi Year Plan strives to achieve results in the key area which would assist in achieving programme improvements within the resource constraints that exist in the short term and thereafter improve programme infrastructure, particularly the cold chain and transport facilities as these deficiencies impact directly on programme efficiency and effectiveness.

6.1 Issues and Challenges:

Despite programme improvements and coverage gains experienced because of recent investment, EPI faces major challenges.

Service delivery

- District coverage in the North and Central regions is poor with only areas having coverage above 75%.
- 8 out of 11 provinces have high dropout rate. (>10%)
- RED though supported and key to improving coverage is expensive and uses a disproportionate amount of resources for the coverage achieved. It will become more expensive due to government increases in per diems.
- Lack of adequate transport and personnel hamper service delivery

Vaccine supply, quality and logistics

- An aged cold chain at district level with difficulties obtaining parts and supported by suitably qualified cold chain technicians limits the effectiveness of an other well managed vaccine distribution system
- Lack of vaccine monitoring at regional and district level

Advocacy and communication

- Though staff are committed at service delivery level there is a lack of an overall EPI communication strategy
- Routine EPI materials not widely available
- Gains from very successful campaigns not being reflected in coverage post campaigns

Surveillance and Monitoring

- Lack of accurate data leading to underestimation/overestimation of coverage figures hence reporting system yielding unreliable results on which to develop future plans
- No institutionalised system for monitoring adverse events following immunisation

Programme management

- Committed staff constrained by distance to district level for regular supervision
- Human resource level constraints at every level

6.2 Major Priorities

- Improving north and central district coverage and reducing dropout
- Upgrading the cold chain by replacing oldest units
- Preparation for and the phased introduction of the Pentavalent vaccine
- Set clear targets for district level results in consultation with district EPI managers and follow up on pre agreed target performance measurement quarterly.

6.3 Objectives

As stated previously the **Mission** of the EPI of the Ministry of Health of Mozambique is to enhance the lives of the people of Mozambique by protecting them from and striving to eliminate the suffering caused by vaccine preventable diseases.

The **Goal** is to protect all mothers and their children less than five years of age from vaccine preventable diseases, and by so doing, reduce infant mortality, morbidity, and disability, using the best vaccines and medical technologies and safety practices available.

The specific objectives to achieve these mission and goals are for 2008:

- To increase DPT-HepB 3 coverage to 80% in 2008;
- To reduce the dropout rate to less than 10% in the Central and Northern regions by 2008
- To introduce pentavalent vaccine (DPT/HepB+Hib) in 2008 and achieve a nationwide coverage of at least 80%.
- To replace 30% of the cold chain annually in 2007, 2008 and 2009
- To develop an EPI communication strategy (including strategies for hard to reach populations) and to strengthen interpersonal communication between health workers and caretakers
- To build and strengthen human resource capacity for EPI service delivery by 2008
- Maintain polio and measles control activities
- To maintain MNT elimination status

The MoH and the National EPI programme are committed to the achievement of these objectives.

- Successfully introduce Pentavalent in the best 30 districts as identified by the EPI manager.
- Increase DTP/Hep B3 overage by sustained effort particularly in North and Central districts
- Reduce dropout to <10% in the five worst performing provinces
- Replace 300 old cold chain units

6.4 Strategies

- Adequate pre-vaccine introduction training which will be used as an opportunity to raise awareness of coverage and dropout, vaccine management and wastage monitoring particularly for expensive vaccines
- Push RED strategy and engage in advocacy with MOH for resources to support extending RED and MHD
- RED strategy, minimizing missed opportunities and promoting community participation.
- Establishing roster of cold chain capacity and timely replacement of ageing equipment
- Developing, disseminating, and utilizing a national standardized guideline for logistics and vaccine management.
- EPI training needs assessment followed by developing training guidelines and cascade training.

- Adequate pre-vaccine introduction preparedness that include assessment of storage capacity, advocacy, capacity building and monitoring system
- Monitor progress of national polio eradication activities including Laboratory containment activities.

The work plan for 2008 incorporated the changes that are necessary to achieve these objectives and the cMYP reflects the associated financial requirements and what funding is available to achieve these goals. Where funding gaps exist EPI has to engage with donor partners and the Ministry of Health and the Ministry of Planning and Development to advocate for funding.

What follows is the annual work plan covering all aspects of EPI for 2008, setting out system wide objectives, strategies, actions, indicators, timelines, required budget and the personnel responsible for achievement of the targets identified at central and provincial levels.

6.5 Mozambique Annual Work Plan for 2007 Activities, Indicators, Responsible person, Budget and Gaps.

Table 19: Mozambique annual work plan for 2008 with activities, indicators, responsible, budget and indicators

Objectives	Activity	Indicator	Resp	Time frame	Total budget (US$)	Funding	
Service delivery						**Funding**	**GAP**
	Provide vaccine and related injection safety supplies	Percentage of districts receiving supplies and without stock out	EPI/CMAM	Jan-Dec	$8,507,420	$8,507,420	$
To achieve and sustain high routine immunization coverage (children fully immunized)	Conduct training on RED and micro-plan development at the district or local level	Number of districts with EPI integrated microplans - at least 80%	EPI/Soc Mob/Surv/Nutr	Jan-Dec	$150,000	$125,740	$24,26
	Reduce the number of immunization dropouts (incomplete vaccination) through improved management, defaulter tracing using vaccination register book and community registers	Dropout rate	EPI Managers at Prov and District levels	Jan-Dec	$96,920	$96,920	$
	Develop and update supervisory mechanisms and tools, print and distribute	Supervisory tools developed, printed out and distributed	EPI / Surv / SIS / Soc Mob	Jan-March	$15,000	$15,000	$
	Provide timely funding, logistic support and supplies for programme implementation in every district - RED implementation	Percentage of districts implementing RED	EPI Managers at all levels / DAG at all levels	Jan-Dec	$2,194,088	$1,428,194	$765,89
	Supportive supervision to districts	Nr of supervisory visits conducted	EPI Managers all levels	March-Dec	$100,000	$70,000	$30,00
To achieve and sustain high routine Vit A and dewarming coverage in children and women in pos-partum	Integrate Vit A supplementation and dewarming with EPI in outreach sessions (Budget already included in RED activity implementation above)	Percentage of children aged 9-59 months and of pos-partum women	EPI / Nutrition / Soc Mob	Jan-Dec	$0	$0	$
To begin intrduction of pentavalent vaccine and ensure that the coverage of pentavalent reaches the same level as coverage for routine	Introduction of Pentavalent vaccine (for detailed activities and budget, please see new vaccine introduction plan in the appendix Z)	Pentavalent vaccine introduced	EPI / Soc Mob at all levels	Jan-March	$1,438,873	$275,031	$1,163,84
	All activities planned and budgeted for above, to achieve and sustain high immunization coverage	Pentavalent coverage rate	EPI Managers all levels / Soc Mob all levels	March-Dec	$0	$0	$
Conduct integrated SIAs	Conduct measles SIAs (integrated with OPV and Vit A)	Targert group coverage	EPI / Soc Mob	July-Aug	$4,087,526	$0	$4,087,52
	Conduct polio SIAs (integrated with Measles and Vit A)	Targert group coverage	EPI / Soc Mob	July-Aug	$1,938,783	$0	$1,938,78
	Conduct Vit A SIAs (integrated with Measles and Vit A)	Targert group coverage	EPI / Soc Mob	July-Aug	$1,301,056	$0	$1,301,05

Table 19.1: Mozambique annual work plan for 2008 with activities, indicators, responsible, budget and indicators

Objectives	Activity	Indicator	Resp	Time frame	Total budget (US$)	Funding	
Vaccine supplies, quality and logistics						**Funding**	**GAP**
To strengthen vaccine management systems at all levels	Build capacity for effective vaccine management through training and the development of information systems at provincial and district levels (introduction of vaccine management tools - VSMT & DVDMT)	Nr of districts and provincies with health workers trained and using the VSMT or DVDMT	EPI Managers all levels / SIS all levels	Jan-Dec	$260.000	$227.000	$33.000
	Take vaccines beyond the cold chain, using a WM-based vaccine management	All vaccines used in NIP with VVM	EPI/CMAM	Jan-Dec	$0	$0	$0
	Procure 30 computers and their accessories	Nr computers and assessories purchased	EPI Central level / DAG	Jan-Dec	$46.080	$46.080	$0
To strengthen the national cold chain systems	Maintain existing cold chain equipment	Percentage of cold chain in good running condition	EPI/DAG-Maint	Jan-Dec	$237.453	$237.453	$0
	Training of provincial cold chain technicians on cold chain maintenance	Nr of provincial cold chain techinicians trained	EPI / DAG-Maint	Jan-June	$28.500	$0	$28.500
	Introduction of cold chain inventory tool and training of national EPI logisticians on its use	Nr of provincial EPI logisticians trained	EPI / DAG-Maint	Jan-March	$5.000	$0	$5.000
	Develop, reproduce and distribute a short technical guideline on cold chain for provincial and district use	Existence of a technical guideline on cold chain and its availability at provincial and district levels	EPI / DAG-Maint	Jan-March	$8.000	$0	$8.000
	Develop a national cold chain rehabilitation plan	Existence of a national cold chain rehabilitation plan	EPI / DAG-Maint	Jan-March	$0	$0	$0
	Replace 30% of aged cold-chain equipment every year for three years	Percentage of old a depleted cold chain equipment replaced	EPI / DAG-Maint	Jan-Dec	$706.560	$318.116	$388.444
To improve vehicle and motorcycle maintenance and secure additional ones for the efficient running of the EPI programme	Maintain of cars, motorcycles	Percentage of roadworthy vehicles	EPI, Maint & DAG all levels	Jan-Dec	$193.772	$13.500	$180.272
	Procure vehicles to replace old units	Nr of vehicles procured	EPI, Maint & DAG central level	Jan-Dec	$217.286	$50.000	$167.286
	Procure motorcycles	Number of motorbikes procured	EPI, Maint & DAG central level	Jan-Dec	$199.680	$160.400	$39.280
Overhead and other equipment	Overhead and other equipment	Nr of equipments purchased	EPI, Maint & DAG central level	Jan-Dec	$41.669	$41.669	$0
To improve injection safety practices	Raise awareness of the importance of injection safety	Percentage of sites disposing waste safely	EPI/Environ. Health all levels	Jan-Dec	$10.000	$10.000	$0
	Build incinerators and establish waste collection management system.	Nr of incinerators built	EPI/Environ. Health all levels	Jan-Dec	$100.431	$77.606	$22.825

Table 19.2: Mozambique annual work plan for 2008 with activities, indicators, responsible, budget and indicators

Objectives	Activity	Indicator	Resp	Time frame	Total budget (US$)	Funding	
Advocacy, Social Mobilization and Communication						**Funded by**	**GAP**
To increase community demand for immunization	Support production of social mobilization material	Existence of soc mob material and their availability at all levels	Soc Mob/EPI	Jan-April	$63.015	$21.000	$42.015
	Engage community members, NGOs and interest groups in immunization advocacy and implementation	Number of recorded meetings at the community level	Soc Mob/EPI	Jan-Dec	$10.000	$10.000	$0
	Engage media (radio and television and community radio) and teathral goups in the dissemination of EPI mensages	Media and teathral groups disseminating messages	Soc Mob/EPI	Jan-Dec	$435.499	$260.000	$175.499
	Train and involve community leaders, community activists and teathral goups in social mobilization for EPI	Nr of leaders and activists trained and working closely with the health sector	Soc Mob/EPI	Jan-Dec	$273.329	$202.524	$70.805
	Assess the existing communication gaps in reaching communities and develop and implement a communication and social mobilisation plan	Assessment report	Soc Mob/EPI	Jan-Feb	$20.000	$11.844	$8.156
	Procure social mobilization means (megaphones, amplifiers - mobile unities, bateries for megaphones and bateries chargers)	Nr of means purchased	Soc Mob/EPI	Jan-June	$177.577	$0	$177.577

Table 19.3: Mozambique annual work plan for 2008 with activities, indicators, responsible, budget and indicators

Objectives	Activity	Indicator	Resp	Time frame	Total budget (US$)	Funding	
Disease Surveillance						**Funding**	**GAP**
	Secure salaries for provincial AFP surveillance officers	Number of AFP surveillance officers recruited	Surv / EPI	Jan-Dec	$165.000	$165.000	$
To achieve and sustain high quality AFP surveillance in all districts in terms of detection rate and punctual stool specimen collection	Expand the existing surveillance systems (Polio, measles and MNT) in order to progress towards effective case-based surveillance of VPDs	Measles and NNT integrated with AFP and other VPD surveillance reported timely	Surv / EPI	Jan-March	$0	$0	$
	Orientate Village Health Committees(VHCs) and traditional healers	Nr of VHC oriented (2 /year)	Surv / EPI	Jan-Dec	$30.000	$30.000	$
	Actively search for AFP cases (including Measles and NNT cass)	Nr of visits conducted	Surv	Jan-Dec	$200.000	$200.000	$
	Review AFP cases	Nr of AFP cases reviewed	Surv	Quartely	$0	$0	$
	Provide funds for the transportation of stool specimens	Funds provided	Surv / EPI	Jan-Dec	$20.000	$20.000	$
To achieve and sustain high quality measles surveillance and elimination status	Use available data of monthly suspected measles cases to identify areas that have circulation of measles virus	Number of measles cases detected and investigated	Surv / EPI	Jan-Dec	$0	$0	$
	Procure laboratory supplies e.g. reagents	Quantity of supplies purchased	Surv / EPI / Lab	Jan-Dec	$25.000	$25.000	$
	Conduct district based briefings for health workers	Nr of briefings conducted	Surv / EPI	Jan-Dec	$24.000	$24.000	$
	Carry out case investigation and intensify laboratory diagnosis of suspected measles cases.	Nr of reported cases investigated	Surv / EPI / Lab	Jan-Dec	$25.000	$25.000	$
To achieve and sustain high MNT surveillance and elimination status	Identify high risk district/areas	Number of MNT cases investigated	Surv / EPI	Jan-Dec	$0	$0	$
	Investigate neonatal deaths with unknown causes	Nr of reported cases investigated	Surv/EPI/ Expert Committee	Jan-Dec	$15.000	$15.000	$
	Sensitize Traditional Birth Attendants (TBAs)	Nr of meetings held	Surv / Soc Mob		$8.000	$8.000	$
	Intensify active search in admitting hospitals (budget included above with AFP)	Nr of visits conducted	Surv	Jan-Dec	$0	$0	$
	Line list all NNT cases.	List of detected cases of NNT	Surv	Jan-Dec	$0	$0	$
To achieve and sustain high Hib surveillance status	Expand sentinel sites for Hib	Number of new sites established	Surv / EPI / Lab	Jan-Dec	$7.000	$7.000	$
To guarantee the optimal performance of the VPD surveillance system	promote quartely meetings with surveillanve officers to evaluat the performance of VPD surveillance	Nr of meetings held	Surv / EPI	Jan-Dec	$30.000	$30.000	$
Operational reseach	Conduct ooperational research for EPI to evaluate and improve program implementation	report on the reasearch conduted available	EPI / Surv / SIS / Soc Mob , etc.	Jan-Dec	$50.000	$25.000	$25.00

Table 19.3: Mozambique annual work plan for 2008 with activities, indicators, responsible, budget and indicators

Objectives	Activity	Indicator	Resp	Time frame	Total budget (US$)	Funding	
						Funding source	GAP
Programme management							
Provide health workers with necessary tools to allow better program management	Assesment of MLM and RED Strategies	Existence of the assessment report and its dissemination	EPI / Soc Mob	Jan-March	$10.000	$0	$10.000
	Reproduction and distribution of EPI manual	Nr of Manuals distributed	EPI	Jan-March	$59.077	$0	$59.077
	Reproduction and distribution of New EPI data colaction Tools	Nr of tools distributed	EPI / SIS	Jan-March	$17.723	$0	$17.723

Table 19.7: MOZAMBIQUE ANNUAL WORK PLAN 2007

Objectives	Activity	Indicator	Resp	Time frame	Total budget	Funding	
						Funding source	GAP
Programme management							$(
Provide health workers with necessary tools to allow better mnagement program	Review of MLM and RED Strategies	Assessment report	EPI / Soc Mob	Sept/Oct			$(
	Production and distribution of EPI manual	Nr of Manuals distributed	EPI	April	$100,000	$0	$100,00
	Production and distribution of New EPI data colaction Tools	Nr of tools distributed	EPI / SIS	April	$200,000	0	$200,00

7.0 CONCLUSION AND RECOMMENDATION

This concludes the comprehensive Multi Year Plan for the EPI of Mozambique. The process of producing the cMYP has been beneficial to the management of EPI in highlighting key areas where sustained effort is needed in 2007 and beyond to further improve the programme.

The EPI through the Ministry of Health submit this plan to GAVI to secure the additional resources needed for the introduction of the Pentavalent vaccine. It seek similar commitments from the Ministry of Health and the Ministry of Planning and Development to support our efforts to enhance the effectiveness of the EPI which impacts directly, on the reduction of child mortality, and improvement of the health of the target population.

The management of EPI are committed to the improvement of the service delivery. This single aim is reflected in the efforts of all our personnel on a daily basis. We will strive to achieve the goals set.

We thank our donor partners for their past support and we look forward to your continued support in the achievement of the challenges we have set for the future.

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