DEMOCRATIC REPUBLIC OF SAO TOME AND PRINCIPE

MINISTRY OF HEALTH

DIRECTORATE OF HEALTH CARE

EXPANDED PROGRAM ON IMMUNIZATION

COMPREHENSIVE MULTI-YEAR PLAN

2012 – 2015

DRAFT 3

May 2011

Contents

LIST OF ABBREVIATIONS USED

STP: Sao Tome and Principe
ACD: Reaching Every District
HE LIKES: Breast-feeding Exclusively
AMP: Association for Preventive Medicine
ODA: Public Aid for Development
ARIVA: Support for strengthening the immunization initiative in Africa
ART: Anti Retroviral
BCG: BCG Bacille Calmette-Guerin (vaccine against tuberculosis)
BM: World Bank
BS: Security Box
ICC: Inter Agency Coordinating Committee
CDF Cold Chain
DOT: Direct Observed Treatment
DS: Health District
DDS: District Health Offices
EV: Vaccination teams
DSSP: Directorate of Primary Health Care
DTC3: Diphtheria, tetanus and pertussis vaccine (3rd dose)
LCA: Fully immunized child
GAVI: Global Alliance of Vaccination and Immunization
GIVS: World Vision and Strategy for Immunization
Hep B: Anti hepatitis B vaccine
Hib: Haemophilus influenza type B
IB: Bamako Initiative
IEC: Information Education Communication
HDI: Human Development Index
NID: National Day of immunization
AEFI: Post Immunization Adverse Event
MICS: The Multiple Indicators Clusters Survey

ITN Insecticide-treated nets

MLM: Mid-level management (intermediate level courses for EPI managers)

MDGS: Millennium Development

WHO: World Health Organization

NGO: Non-Governmental Organization

IMCI: Integrated Management of Childhood Illnesses

EPI: Expanded Program on Immunization

FP: Family Planning

AFP: Acute flaccid paralysis

GDP: Gross Domestic Product

LDCS: The least developed countries

UNDP: United Nations Program for Development

NHDP: National Health Development Plan

HIPC: Heavily Indebted Poor Countries

PTMC: Prevention of Transmission from Mother to Child

FSP: The Financial Sustainability Plan

AD INTERLOCKING SYRINGE: AD Interlocking Syringe

DS Dilution Syringe

DNIEC: National Department of Information, Education and Communication

HIV / AIDS: Human Immunodeficiency Virus / Acquired Immunodeficiency Syndrome

EOC: Emergency obstetric care

RM: Reproductive Health

NSPR: National Strategy for Poverty Reduction

PHC: Primary Health Care

MNT: Maternal and neonatal tetanus / neonatal tetanus

UNICEF: United Nations Children's Fund

UNFPA: United Nations Fund for Population Activities

AAV: Anti Amarilis Vaccine

AMV Anti measles vaccine

TT2 +: Anti tetanus vaccine (2nd dose and more)

POV3: Polio vaccine (3rd dose)

DHE: District Head of Epidemiology

$: USD

PREFACE

With an estimated population of 163,783 inhabitants in 2010, and a gross domestic product per capita of $1,231 (2009, INE) the authorities of Sao Tome and Principe are involved in the growing fight against poverty among its populations. They give priority to initiatives that promote the survival of children and women as well as measures to improve the living conditions of populations and thus ensure sustainable development with the goal of achieving the Millennium Development Goals (MDGs)

The high level of infant mortality, 38 per thousand live newborns, EDS 2009, child and adolescent mortality of 63/1000 live infants and maternal mortality of 158/100.000 live newborns, EDS 2009 is one of the major concerns of the country's leaders, who have been taken into consideration in the the fight against poverty in the PRSP 2002 - 2015

Faced with these challenges, priority is given to strengthening access to health services and the quality of basic health care services. This would stimulate community involvement in management and making decisions favorable to improving the health status of populations. Vaccination is an essential service and introduction of new vaccines, one against pneumococcal infections in 2012 and one against rotavirus infections in 2014, will contribute noticeably to achieving the MDGs.

Also, to increase the spectrum of protection of vaccine-preventable diseases and increase the immunity of children, the country also plans to introduce in 2012 the second dose of routine measles immunization in the EPI at the same time as the PCV- 13.

Another challenge facing the country is to maintain very high vaccine coverage for all antigens and improve the level of coverage of children fully vaccinated to prevent the introduction of wild poliovirus and outbreaks of yellow fever and measles.

The main constraint in vaccine management boils down to the storage of vaccines that will be made at the central warehouse of the EPI in Sao Tome, whose capacity will be increased, and supply will be made according to requests, as and when needed, to the districts, whose cold chains have been renewed.

Responsibility for the Inter-Agency Coordinating Committee (IACC) will be through the mobilization of resources, analysis and approval of plans for monitoring and evaluating the implementation of CHP.

This strategic plan covers the next 4 years (2012-2015) and will be targeting children of 0-11 months and pregnant women for routine activities, while for supplementary immunization activities and strengthening immunity, larger targets will be selected.

Government support for EPI will come from the state budget allocated to the Ministry of Health, approved annually by the National Assembly. The budget in question supports personnel costs, operations, overall investment in the public health sector and the purchase of vaccines and immunization supplies.

The state budget spent on health in 2010 was $13,747,833. The degree of implementation of the budget allocated to the Ministry of Health in 2010 was 72%.

The expenses of the ENP are provided mostly with financial, material and logistic resources from partners in the health sector (UNICEF, GAVI, WHO, Institute VALE FLORES, etc.) Nevertheless, the favorable context in which the country finds itself and the Government's commitment to increase spending on the health sector, which increased from $544,357 in 2010 to $647,113 in 2015, represent very positive opportunities for the Ministry of Health to take an active part in achieving the objectives of this multi-year plan under the new vaccination strategies (GIVS).

Written in Sao Tome on

The Minister of Health

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Mme Angela Costa Pinheiro

SUMMARY

The Government of Sao Tome and Principe, aware of its responsibilities towards women and children, and following the agreements signed with the international community as part of its commitment to reaching the Millennium Development Goals (MDGs), in order to reduce poverty and promote economic growth and social development, adopts the comprehensive Multi-Year Plan (CHP) 2012-2015 of the EPI, to mobilize resources for the implementation of immunization activities and other packages of services essential to the survival and development of children.

This comprehensive multi-year plan for 2012 - 2015 EPI Sao Tome and Principe is structured as follows:

1. Introduction
2. General information about the country;
3. The organization of the national health system
4. The situation analysis of EPI,
5. Strengths, weaknesses, opportunities and threats
6. National priorities;
7. The vision of the CHP;
8. Strategies;
9. The schedule of activities;
10. Analysis of costs and financing of the program
11. The mechanism of monitoring and evaluation of CHP
12. The Plan of Action for 2012

Analysis of the situation is presented in the basic components of the immunization system, namely, the five operational components ((i) Provision of services (ii) The integrated epidemiological surveillance of the disease, (iii) Logistics, (iv) Vaccine supply and quality, (v) Communication) and the three supporting components ((i) management, (ii) capacity building and (iii) financing) The general CHP objective for 2012-2015 is to contribute to reducing morbidity and mortality related to diseases preventable by vaccination.

National targets are presented in stages

Table No. I: National goals and milestones of the CHP 2012-2015

	Objectives of vaccine coverage			
Vaccine Type	**2012**	**2013**	**2014**	**2015**
Routine Vaccination	**(%)**	**(%)**	**(%)**	**(%)**
Traditional Vaccines				
BCG	**99%**	**99%**	**99%**	**99%**
TT – Pregnant Women	**95%**	**98%**	**98%**	**98%**
Measles	**95%**	**98%**	**98%**	**98%**
Polio (OPV3)	**98%**	**98%**	**98%**	**98%**
Measles 2nd dose	**80%**	**82%**	**85%**	**90%**
Underused vaccines	_			
Yellow fever	**95%**	**98%**	**98%**	**98%**
DTC-HepB-Hib(3)	**98%**	**98%**	**98%**	**98%**
New Vaccines				
PCV-13	**90%**	**95%**	**98%**	**98%**
ROTAVIRUS(1)			**90%**	**95%**

The introduction of the new vaccine may cause a slight decrease in immunization coverage. Despite this, efforts will be made to maintain coverage of at least 98%

INTRODUCTION

The progress of a people is measured by its ability to prevent events that could negatively affect the quality of life for its population. Vaccination is one of the the most economically efficient and accessible medical interventions available to humans. In other words, vaccination offers the best cost-benefit relationship universally known in reducing morbidity and mortality. Vaccinating a child living in conditions of poverty and misery protects him from the pathogens that prey on young children**.**

The Government of Sao Tome and Principe, aware of its responsibilities towards women and children, and following the agreements signed with the international community in the eradication / elimination and control of diseases preventable by **vaccination, has decided** to make the greatest effort to strengthen the Expanded Program on Immunization (EPI) and develop a plan for the period from 2012 to 2015.

This plan takes into account strategies for maintaining very high vaccine coverage for all antigens and improving the level of coverage of children fully vaccinated to prevent the introduction of wild poliovirus and outbreaks of yellow fever and measles.

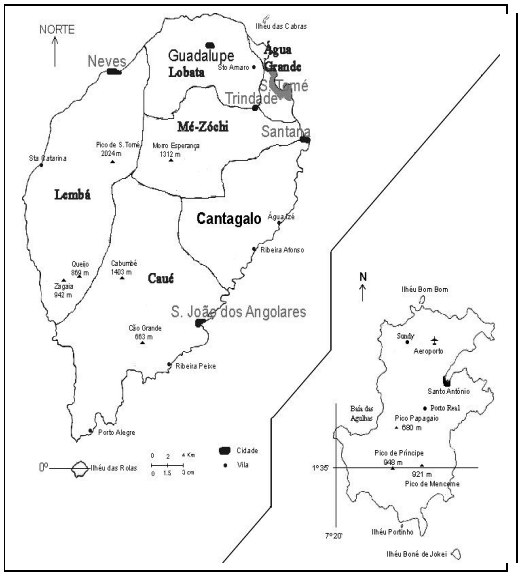
This plan was created with a view to respond to the new approaches contained in the 2006-2015 GIVS, regional and sub-regional recommendations on improving the quality of vaccination and, more specifically, the challenge of introducing new vaccines, especially: pneumococcal vaccines in 2012 and rotavirus in 2014, as well as the progressive inclusion of new global vaccination strategies. The introduction of the second dose of measles in 2012 is listed among the challenges addressed in this plan.

The main objective of this plan is to maintain immunization coverage and improve loss rates in order to improve children's health and well-being. It includes the global initiative to eradicate poliomyelitis, the goals of eliminating maternal and neonatal tetanus (NMR) and the control / elimination of measles. Thus another objective is to take measures so that the funding of traditional vaccines and supplies is insured and guaranteed by the Government, in agreement with the commitments assumed under the project ARIVA and the guidelines set by the Global Alliance for Vaccines and Immunization (GAVI).

OVERVIEW OF COUNTRY

2.1 Geographic Overview

Sao Tome and Principe (STP) is an archipelago formed by two islands and their adjacent islets, located in the Gulf of Guinea, about 350 km to the west coast of Africa. The archipelago covers an area of 1001 km2. The island of S. Tome has a surface area of 859 km2 and the island of Principe, 142 km2
Figure 1; Geographic Map



The islands lie between latitudes 1° 45 ' to the north and 0 ° 25' to the south and meridians 6 ° 26 to the east and 7 º 30' to the west. They are all volcanic islands with rugged terrain, whose highest points are "Pico de Sao Tome" (2024 m), on Sao Tome and "Pico do Prince" (948m) on the island of Principe. These factors do not negatively influence the implementation of immunization activities.

The climate is tropical humid, characterized by the existence of two seasons: first, a rainy season, with a duration of about nine months, from September to May; and the other, the dry season called "Gravana", lasting about three months (June-August). There is, however, an intermediary season called "Gravanito" which occurs briefly between the months of December and January according to the movement of the intertropical convergence zone. It is characterized by lower rainfall and higher mean air temperature which favors the EPI activities.

Given the characteristics of the terrain, there are many microclimates. The most mountainous areas have high rainfall around 7,000 mm per year, while the lower areas (North and Northwest) are the least watered with approximately 1,000 mm of rainfall per year. The average annual temperature is 26º C. In coastal areas it is around 27º C and in mountainous areas 21º C.

2.2. Demographic data

Following the general census of population and housing conducted in 2001, the country's population was estimated at 148,177 inhabitants in 2006, with an annual growth rate of 1.9%. The birth rate decreased, from 5.9 children per woman in 1991 to 4.7 in 2001. The prevalence rate of contraception with modern methods increased from 15% in 1996 to 28.7% in 2005 and 38.4 in 2009 (DHS, 2008-2009). Girls are confronted with problems of unwanted teenage pregnancy, low levels of education, poverty and limited employment opportunities. Most sexual and reproductive health problems in adolescents result from limitations in supply and access to services and information.

The population increase has been accompanied by the phenomenon of rural exodus, average population density is 167 inhabitants/Km (in 2006) but with strong variance from one district to another. The population is predominantly urban, approximately 58% (estimate based on the census of 2001); however, half of urban residents live in urban and suburban neighborhoods. In the structure of the population in 2005, women outnumber men (51%) and are found mainly in urban areas. Furthermore, the population is very young with 50% under 16 years.

Table No. I: Projection of the number of target groups of EPI and other packet services associated with vaccination (RGPH 2001)

Target groups	2012	2 013	2 014	2 015	2 016
Total population *	170 082	173 484	176 953	180 492	184 102
Women of childbearing age (22%)	37 349	38 095	38 857	39 634	40 426
Pregnant women (3.9%)	6 633	6 766	6 901	7 039	7 180
Children 0-15 years (43%)	72 999	74 459	75 948	77 467	79 016
Children 0-5 years (15%)	25 607	25 974	26 494	27 023	27 563
Children < 1 an (3.4%)	5 783	5 898	6 016	6 139	6 259
Surviving infants (3.3%)	5 633	5 725	5 839	5 956	6 075

*** Source: Total population: National Statistical Agency**

This new database is the official source at the national level and is used by all partners. A new census is expected in 2011, which we will provide updated population bases for the years from 2013

2.3 Economic overview

STP is one of the Least Developed Countries (LDCs), with a GDP growth rate in the order of 4.8% (INE 2009). GDP per capita in 2008 and 2009 is USD 1154 and USD 1231, respectively (INE 2009). During the period 2008 - 2009, GDP increased by about 12.57%.

The country is going on over two decades facing a macroeconomic imbalance characterized by the chronic deficit in its balance of payments, forcing it to resort to external debt, which reached USD 139 million in 2009, almost 251% of its GDP (in 2009).

Inflation is in double digits, 13.7% in 2009. Such high inflation creates more and more poor, 15% of whom lived on less than 1 USD per day in 2001.

According to ENRP (National Strategy for Poverty Reduction), the incidence of poverty and extreme poverty is more pronounced in families headed by women, with 55.7% and 15.6% respectively, compared to 53% and 14.9% in households headed by men.

But still, there are signs of a better future for STP, taking into account the following indicators:
STP has become eligible for debt relief under the HIPC initiative since 2000. A paper on the Strategy for Poverty Reduction was adopted by the government in 2002 and is a document that has health care as its priority and should inspire confidence and **support of** development partners.
Some successes in structural reform related to creating an environment conducive to business and the consolidation of the government.
-Favorable developments in the political realm.
Debt relief under the HIPC (Heavily Indebted Poor Countries) initiative
In the ranking based on the HDI, STP occupied the 127th position with an index of 0.488 in 2008.

Sao Tome and Principe may be about to experience a major change in its economy with offshore oil production planned to go operational in 2013.

In July 2009 the Government signed an agreement with Portugal to ensure monetary parity between the Dobra (the local currency) and the Euro starting in January 2010. Under the agreement, Portugal is prepared to support Sao Tome and Principe, with a line of credit under a joint agreement of sustainable macroeconomic policies.

3. 0rganisation of the health system

3.1 Health Structures and their functioning

STP's health care system is based on the implementation of Primary Health Care (PHC) in health districts. Its different levels, mentioned above, are complemented with a double pyramidal, administrative and technical organization. This health system includes the central and the peripheral level, commonly called the district level.

3.1.1 Central level

It consists of the Ministry of Health, which has an essentially normative and strategic role. It includes:
Office of the Minister, the central departments including administrative and financial management, management of health care, the national center against endemic diseases and the central hospital.
The Directorate of Health Care consists of reproductive health programs, epidemiological surveillance, mental health, the sector for the regulation of pharmaceuticals, and the National Center for Health Education (CNES). The EPI program is part of the reproductive health program.
- The National Centre for the Fight against Endemic Diseases in charge of the following programs: Fight against Malaria, HIV / AIDS and Tuberculosis.

The district level

This is the operational level; it includes 7 health Districts, including the Autonomous Region of Principe (RAP). The district consists of a set of structures intended to meet the primary needs of populations. There is:

The Health Centres (SC), the most differentiated structures in the districts, with a well-defined basic funtional content and has a permanent interdisciplinary team including general practitioners, organized to provide promotional and preventive care, but also has an inpatient unit;
The Health Stations (PS), a sort of extension of the SCs, which receive support and supervision. They are active under the direct responsibility of a general nurse and the district team who goes there regularly.
- The Community Health Post (CRP), belonging to rural communities, receives support in order to provide basic care, first aid and the promotion of health.

3.2 Health and infrastructure staff

Insufficient human resources is a serious problem for the sector as a whole. Although the number of doctors per capita increased from 1 doctor per 2284 inhabitants in 2004 to 1 doctor per 2112 inhabitants in 2006, and from 1 nurse per 908 inhabitants to 1 nurse for every 800 inhabitants for the same period, but they are not well distributed. The country currently has 27 care delivery units, one of which is a referral hospital, seven health centers and 19 health posts. These health facilities are distributed across the country so that access to care is guaranteed for the vast majority of the population within an average of 60 minutes of walking. There are also some private health posts which support the system.

Immunization services are available in 26 of the 27 health facilities in the country. Furthermore, immunization units at central and district levels are equipped with tools, including transport, equipment and computer equipment, and communication technology (phone, fax, Internet)

3.3 National Health Policy and National Health Development Plan

In 1999, Sao Tome and Principe adopted a new national health policy. The national health policy is based on values defined by the constitution of the Democratic Republic of Sao Tome e Principe and strategies contained in international human health. This policy supports the principles that lay the theoretical foundations of the country's health system and those governing the organization of services. The principles advocated by the national health system and included in the national health policy advocate universal coverage to all levels of attention, without any prejudice or privilege, the integrity of the benefits articulated in a set of actions and promotional, preventive and curative services, individual and collective, as required in each case to all levels of the system and optimizing resources for each level of intervention.
In turn, the principles governing the organization of the National Health Service are: decentralization, the hierarchical organization of the health services network, the ability to solve problems at all practical levels, the use of epidemiological and statistical criteria for rulemaking, the allocation of resources and pragmatic organization on every level, the

complementarity between the private and public health sectors and co-participation of the population through health cost recovery directly or through Social Security institutions, according to each household's level of income.
In 2000, a health development plan (PNDS) covering the period of 2001-2005 was developed. The plan aimed to improve the health of the population by strengthening the district health system. Its implementation has allowed for several projects especially in centers and health posts. The country intends to carry out the review of national health policy and PNDS, in order to update them.
On a national level, a document entitled "grandes opçoes do plano" covering the period of 2008 -2010 sets out policy guidelines, notably involving health. To meet the requirements of the new plan, a central committee was established at the Ministry for Health to develop the 2012-2016 PNDS, in which immunization activities occupy a prominent place.

3.4 Health Funding

There are three types of funding: State funding, supplemented by funding by the communities and the Partners. Sao Tome and Principe has endorsed the Millennium Goals for Development which consist in reducing maternal mortality by three quarters, cutting by two thirds the mortality of children under 5 years, stopping and measuring trends in the spread of HIV / AIDS between now and 2015.

3.4.1 State Funding

The level of government commitment to the health sector is reflected in the state budget. From 2007 to 2010, there was a significant increase of 45.4%. However, the implementation rate went from 88% in 2008 to 72% in 2010. The data table below show a downward trend in state financing of the health sector.

Table III: Development of the general budget and part of the budget allocated to health sector (in USD)

	Budget of the Ministry of Health		% Execution
	Prog.	Exec	
2010	13,747,833	9,899,729	72%
2009	12,359,560	9,510,858	77%
2008	8,718,665	7,657,541	88%
2007	7,511,217	5,502,524	73%

3.4.2 Community Health Funding

In the constitution of the country, medical assistance and provision of medicine are provided free. The Government, on the other hand, has authorized the participation of the population in health care spending through the cost recovery system.

Although this mechanism enables health facilities to participate in the financing of their operating expenses, it is nonetheless arbitrary and disorganized. Indeed, the amount of

partial cost recovery in health facilities district is undervalued due to lack of fulfilment of procedures of accounting records. For these reasons, this funding does not reflect in improved care.

3.4.3 Financial Collaboration of Partners

The health system is highly dependent on external support, in financial, technical and material terms. About 40% of the financing of health programs and activities are provided by the partners' contribution. Compared to EPI financing, until 2006, the contribution of partners was over 85%. The main partners in developing the health sector are: WHO, UNICEF,

UNFPA, GAVI, World Bank, the Portuguese Cooperation, Taiwanese Cooperation, ADB and Community Associations.

4. ANALYSIS OF THE SITUATION OF THE EXPANDED PROGRAMME ON IMMUNIZATION

The situation analysis of the EPI has been made by the method of Strengths, Weaknesses Opportunities and Threats (SWOT) and covers the period from 2003 to 2006. It focused on the five essential components of the immunization system, and the three support components. The five key components are: services, supply and quality of vaccines, Communication, Surveillance and Logistics. The three support components are: program management, financing and capacity development.

4.1 Providing services

Immunization services are provided in all the posts and health centers of the country.
In remote communities, activities are conducted with the support of mobile vaccination teams. Vaccination strategies for STP include: vaccination strategies in the fixed posts and health centers and immunization strategies by mobile teams that reach the target of outlying, hard-to-access villages. The latter have enabled supply supply services to improve.

4.1.1 Vaccination schedule

The national immunization schedule (Table III) consists of 9 antigens: traditional vaccines (BCG, OPV, DPT-HepB + Hib, TT and measles) and more recently (2003) vaccines against hepatitis B and yellow fever (AAV).
Table II: Immunization schedule in STP

CHILD		PREGNANCY	
Age of administration	**s**	**Period of administration**	**Vaccine**
At birth	BCG ; POLIO 0	1st consultation	TT1
6 weeks	DTC1-HepB1+Hib1, POLIO 1;	4 weeks following	TT2
10 weeks	DTC2-HepB2+Hib2, POLIO 2 ;	6 months following	TT3
14 weeks	DTC3-HepB3+Hib3, POLIO 3	1 year following	TT4
9 months	VAR + VAA	1 year following	TT5

4.1.2 Immunisation coverage

Since the year 2000 immunization coverage for BCG antigens, DPT3 and OPV3 has increased to over 80%. In 2004, 85% of health districts had coverage of over 80% compared to a single district within 75%. Since the implementation of the strategy "Reaching Every District (RED) in 2005, coverage is above 90% for all antigens and in all districts. This strategy has also contributed to the increased coverage of vitamin A (from 3% in 2001 to 75% 2006, MICS).

This performance of the program allowed demand in STP to be met for the introduction of vaccines against hepatitis B and yellow fever in 2003. Despite the failure of stock in 2005 for the yellow fever vaccine and the one against hepatitis B in 2006, coverage for both vaccines had the same trend of increase as the others.

Trends in vaccination coverage from 2006 to 2010

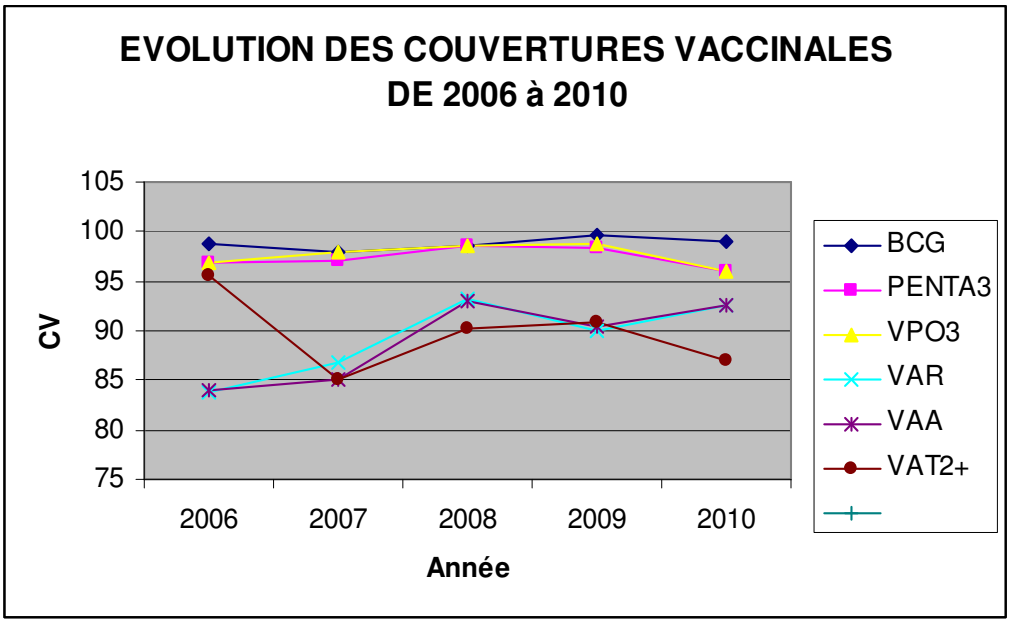
Based on administrative data, changes in coverage between 2006 and 2010 is as shown below:

Table No. III: Changes in vaccine coverage 2006-2010(%)

Year	BCG	DTC3	OVP3	VAR	VAA	HEP B3	PENTA3	TT2+	VIT A
2006	98.7	96.8	96.8	83.8	84	75		95.5	
2007	98	97	98	86.8	85.0	108.0		85.0	
2008	99.8	98.6	98.6	93.3	93.1	98.6		90.2	
2009	99.7	98.4	98.7	90.0	90.4	98.4	98.4*	90.8	
2010	99.0		96.1	92.5	92.5		96.1	86.9	

* PENTA was introduced in October 2009 which is why PENTA coverage presented here is referenced relative to DTP3

Graph: Trends in vaccination coverage from 2006 to 2010



Performance of districts

Table 4: Performance of health districts from 2007 to 2010

Antigens	DTP3<50%				50<DTP3<80%				DTP3>=80%			
Year	2007	2008	2009	2010	2007	2008	2009	2010	2007	2008	2009	2010
No. of health districts	0	0	0	0	0	0	0	0	7	7	7	7

Source: JRF

Vaccination coverage shown in the table above shows the steady maintenance of program performance, if not an improvement, having always remained above 90% for all antigens. DPT3 coverage increased from 96.8% in 2006 to 98.4% in 2010, a gain of 2%. The number of districts with DTP3 coverage above 80% is still around 100% since 2007. The same patterns of progress in immunization coverage are also observed for measles vaccine, which increased from 83.8% in 2006

to 92.5% in 2010. Maintaining immunization coverage above 80% for AMV since 2006 allowed the country introduce the second dose of measles, as required by the WHO. Considering this performance, WHO / AFRO has adopted STP among countries eligible to enter the second dose of measles.

TT2 + coverage among pregnant women rose from 92.7 to 98.6% which represents a gain of 5.9% and those of OPV3 VAA have improved over the years to achieve coverage rates of> 90%.

This same level of coverage reflects the positive impact of training on the management of EPI and of vaccines which the department has received. To maintain current levels of coverage achieved, it will be necessary to strengthen the outreach of monitoring and evaluation with community participation.

The immunization coverage survey conducted from October 22 to November 14, 2007 confirmed the high immunization coverage in terms of antigens, as reported by the EPI. However, the proportion of children fully vaccinated at one year is relatively low (67.3%) given the high rates of immunization coverage by antigen at the age of 1 year with the lowest is 78.2% (yellow fever). Previous investigations also show a gradual and steady increase in immunization coverage.

However, the data from the Demographic and Health Survey (DHS) for 2008-2009 indicate a 94% immunization coverage for BCG, 87% for DPT3 and for Polio3, 84% for measles.

In sum, the different vaccination strategies applied in the country led to a gradual and steady improvement of vaccine coverage for all antigens. Covers current levels reflect improved access to immunization services and use of services by the community.

For STP, it is imperative to maintain performance in terms of antigens and provide new challenges: respect for the immunization schedule and achieving a proportion of children fully immunized at their first birthday at least 80%.

4.1.3 Dropout Rate

The dropout rate for DTP1-DTP3 in STP is constant and stable at <10% in all districts, which reflects a good use of services. BCG / VAR rates have seen a marked improvement from 14% in 2007 to 6.5% in 2010 nationally. In 2010, 100% of districts had BCG / VAR dropout rates of <10%, which reflects good continuity of immunization services. This trend was observed during the immunization coverage survey in 2007. The national average dropout rate of these is illustrated in Table 2 below:

Dropout rate	**2006**	**2007**	**2008**	**2009**	**2010**
(DTP1-DTP3)/DTP1	NAD	NAD	2%	1.4%	2%

4.1.4 Introduction of new and underused vaccines

EPI SAO TOME AND PRINCIPE had previous experience in the introduction of new vaccines. This experience will be considered in the current context of the introduction of the vaccine against pneumococcus. Since September 2003, EPI has successfully introduced yellow fever and hepatitis B vaccines with the support of GAVI. In 2009, the vaccine against Haemophilus influenzae in its lyophilized pentavalent form (DTP-HepB + Hib) was also introduced into the EPI routine. Prior to the introduction of these underused vaccines, activities related to training staff on the management of vaccines, the mode of administration and surveillance of AEFI were held. Activities have also been implemented to raise public awareness through advertisements and radio broadcasts, including the mobilization of proximity with the organization of focus for healthcare providers and clinicians. The introduction strategy adopted has been to begin integration of the vaccine over the entire national territory.

An evaluation after introduction of the Haemophilus influenzae B vaccine was made in October 2010 and the lessons learned such as the extension of the cold chain, community involvement in educating and training officers will serve to improve the introduction of the vaccine against pneumococcal disease, and the second dose of measles vaccine in 2012 and the rotavirus vaccine in 2014. In addition to vaccination against yellow fever, the hepatitis B and pentavalent vaccines (DTP-HepB-Hib), the EPI has successfully introduced vitamin A to the routine immunization, the use of AD blocking syringes and safety boxes.
These new vaccines will be administered according to the updated schedule below:

Table IV: immunization schedule in STP after introduction of pentavalent, the second dose of measles and new vaccines (pneumococcal and rotavirus)

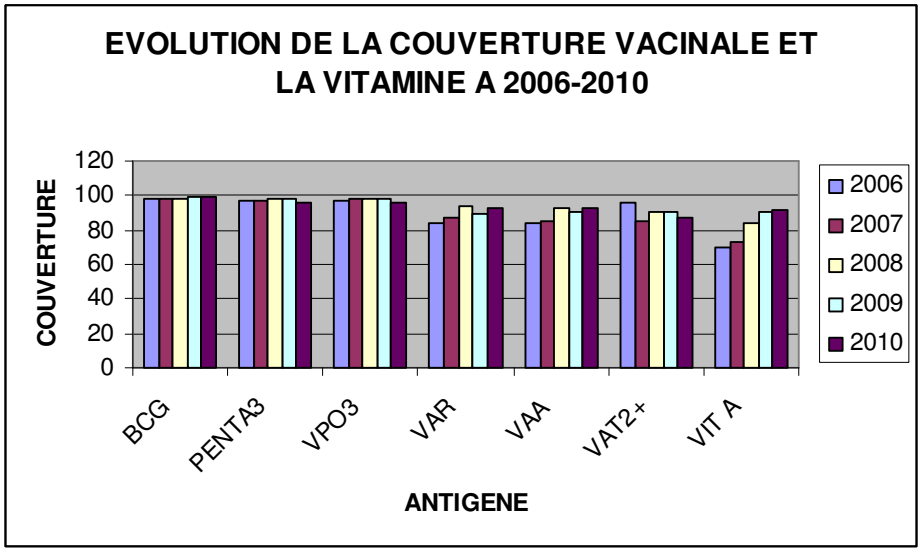
s	**Age of administration**
BCG, OPV 0	At birth
OPV 1, DTC-HepB-Hib 1,Pneumo, Rota	At 6 weeks
OPV 2, DTC-HepB-Hib 2,Pneumo, Rota	At 10 weeks

OPV 3,DTC-HepB-HIB 3,Pneumo, Rota	At 14 weeks
VAR1+ VAA	At 9 months
OPV4	At 15 months
VAR2	At 15 months

4.1.5 Integration of Other Programs

As part of the integration of EPI activities with the nutrition program, vitamin A has been introduced in the provision of routine services in 2000. Vitamin A was incorporated into the routine EPI from 2003; coverage increased from 70% in 2006 to 92.1% in 2010 for children under 1 year. The vitamin A supplementation is also administered to women postpartum. Management and monitoring of vitamin A are the same as those for EPI antigens. The chart below shows the monitoring of the administration of vitamin A, as well as different antigens, in children under one year.

Chart No. 5. Changes in immunization coverage and Vitamin A supplementation, 2006-2010



Similarly, other activities such as the distribution of mebendazole and insecticide-treated nets and the implementation of IMCI are all integrated with the EPI.

The supply and distribution of vaccines and other consumables, Vitamin A, mosquito nets, Fansidar, Ferrous Salt + Folic Acid is made in accordance with the needs of each Centre and Health Post

4.2. Epidemiological Surveillance

Surveillance of EPI target diseases is conducted within the overall framework of integrated disease surveillance (GIIS). Eight diseases (measles, hemorrhagic fever, Shigellosis, Cholera, Meningitis, PFA, yellow fever and NMR) are being monitored weekly using the telephone network.
Epidemiological surveillance of AFP is the core for developing integrated disease surveillance during the last five years. All districts have focal points for monitoring (RDE) which have been operationalized through the implementation of GIIS and use available data-collecting tools and are an integral part of the monthly report of the districts. Completeness and timeliness of these reports vary between 80% to 100%. It may be noted in the table below that no cases of poliomyelitis, whooping cough, measles, MNT, or yellow fever have been reported since 2003.

However, the health information system of the country is experiencing difficulties in coordinating the different data from different programs.

4.2.1 Surveillance of AFP

The last case of polio was reported in 1983. Since 2002, AFP surveillance has been restructured and strengthened by the recruitment of focal detection points as part of the global initiative to eradicate polio worldwide. Following the implementation of this initiative, various committees, most notably the certification committee (NCC), the committee of scientific experts on Polio (CPC) and the Containment Group (GC), which were created to ensure monitoring. For suspected cases, stool samples are sent to a reference laboratory for WHO (Institut Pasteur in Yaounde / Cameroon), because the country does not have a suitably equipped laboratory.

Table VI Performance level of AFP surveillance in STP from 2006 to 2010

Year	Population <15 years	No. of AFP cases treated	Total No. of AFP cases reported	No. of confirmed polio cases	Total non-polio AFP cases reported	Rate of non-polio AFP	AFP cases with adequate stool samples	
							Nº	%
2006	66 421	2	1	0	1	1,5	2	100%
2007	66 609	2	0	0	0	0	NA	NA
2008	67784	2	4	0	4	6.0	4	100%
2009	69953	2	0	0	0	0	NA	NA
2010	70427	2	0	0	0	0	NA	NA

Source: Directorate of Health Care Health Min

The table above shows the performance of AFP surveillance. It is observed that the final notification of case dates back to 2008. Does the absence of AFP cases in 2009 and 2010 show that WPV stopped spreading or that AFP surveillance was inadequate? In any case, efforts to strengthen surveillance are undertaken at all levels for better performance

4.2.2 Surveillance of measles, yellow fever and maternal and neonatal tetanus

The last case of measles dates to 1994 and that of neonatal tetanus to 1997. Until now, the country has recorded no cases of yellow fever. These diseases are monitored case-by-case, with laboratory confirmation if necessary. As part of TMN, the activities have been reinforced, particularly at the community level, to target women of childbearing age. The summary table below shows the level of key monitoring indicators from 2006 to 2010, and those above give an idea of efforts in the fight against diseases preventable by vaccination in the country.

Table IX: Evolution of the EPI target diseases 2006 - 2010

	2006	2007	2008	2009	2010
Measles (suspected)	0	0	0	0	0
FJ (suspected)	0	0	0	0	0
MNT	0	0	0	0	0

Source: Directorate of Health Care Health Min

The monitoring of other diseases the trend remains the same as for AFP surveillance and the same concerns remain. Strengthening surveillance of EPI target diseases should be prioritized in light of regional and global issues. However it is worth noting that the country has eliminated MNT in 2005 and with the performance of measles vaccination on the country is well situated for the elimination of measles

4.3 Supply of quality vaccines and cold chain

4.3.1Supply of vaccines

The vaccines are recieved and stored in the central cold chain at the rate of one delivery per year, which ensures distribution.
Distribution at district level is done monthly.
The districts in turn supply health posts weekly except for 3 health centers which stock 3 times a week at the district level due to the lack of a nurse housed on the premises;

Central Level → District cold chain CS Rate of supply→ 1 time/month→1 time/week

The supply of vaccine is based on the needs expressed by district or health post based on the monthly activity reports.

4.3.1.1 Central Level

The supply system is working satisfactorily through the channel of UNICEF, the needs assessment and approval procedures for vaccine reception are well controlled at central level (the needs are identified in connection with coverage targets in effect) The information from UNICEF is received on time, and the steps taken on time for removal and transportation to the ENP facilities. Estimates are made and recorded in the multi-year plan. Staff in areas of collaboration are not trained and did not receive specific instructions on what to do in order to protect the vaccine. From the foregoing, we note that the criteria for effective management in particular as regards the criteria for pre-shipment are partially applied. There is no national regulatory authority (NRA) to enforce the minimum required functions.

The choice of the vaccine in small packaging is increasingly preferred to minimize loss from use. Vaccine management tools exist and are maintained (records and manual stock cards). However, the difficulties of mastery of the computer tool led to the computerized stock management file for vaccination inputs (SMT) being neglected. Only the vaccination data tracking file at the District level (DVDMT) is applied at the central level, but with great difficulty.

The central level has locally developed Excel spreadsheets to capture and track data, providing greater ease of reading and tracing of batches. Vaccine wastage by expiry is thus observed. Management reports and doses of vaccines are created, but often sent late to the coordination of inter-country Support Team in Libreville (STI). The principle of "bundling" in the distribution of vaccine and injection equipment is not systematic in its application; the ratio of the number of doses distributed and syringes still shows the low application of this principle.

4.3.1.2 Peripheral level:

The supply is made by the central level. The arrangements for identifying needs seem poorly mastered; this opinion is justified by the hoarding of large quantities of vaccine at the base causing negative loss rates observed at the central level.
The reports are prepared and sent very late, and the remaining stocks are not always updated for fear of running out of stock. The instructions are not distributed so as to ensure proper reporting; bottles already opened are recorded in most centers. Little information documents the use of injecting equipment and disposal of wastes from immunization activities.

4.3.2 Standards and procedures for vaccine management and materials

Overall, there is a problem of lack of texts and management procedures at both central and peripheral levels. The country will have to make efforts in adaptation and finalization of EPÎ regulations and standards. The tools for collecting management data exist at all levels, but present difficulties as to their standardization.

4.3.3 The rate of vaccine wastage

The wastage rate is high for all vaccines of BCG (56-57%), VAR (43-39%) and AAV (19-22%). This is explained by the fact that these vaccines are multi dose. According to policy implementation and missed opportunities it is recommended to open a bottle before any child not vaccinated according to the immunization schedule. The small number of children needing to be caught up on vaccination will cause these losses, but the program intends to maintain these current coverage practices given the country. The situation of loss rates observed from 2008 to 2010 is presented in the table below.

Table VIII: Vaccine wastage rate (2006-2010)

s	2006	2007	2008	2009	2010
BCG	NAD	NAD	56%	57, 3%	57, 3%
OPV	nd	nd	9.9%	9.2%	9.2%
DTP	nd	2.7%	3.2%	2,7%	
DTP-HepB-Hib				nd	2.7%
VAR			43%	39%	39.1%
VAA	nd	nd	19.9%	22.8%	22.8%
TV			7.6%	6 .2%	6.2%

4.4 Logistics

4.4.1 Cold Chain

Flexibility:

Flexibility is sufficient at all levels, but in anticipation of the introduction of new vaccines, all refrigerators RCW 42 EK have been gradually replaced by RCW 50 EK (cMYP 2003-2007). With the introduction of pentavalent in 2009 the storage capacity was sufficient at both national and district level. Although the cold chain at the district level does not require expansion even for the introduction of new vaccines, an extension will be necessary for the central level.

At the central level

In anticipation of the introduction of the pneumoccoccic vaccine and 2nd dose of measles vaccine, the need to increase storage capacity at the central level was estimated at about 3000 liters; for this purpose a cold room of 10 000 liters of raw capacity is to be built by the end of 2011. In total there are 5 central chest refrigerators and chest freezers with a positive storage capacity at the national level estimated at 540 liters and 528 liters in negative as shown in the table below.

Table 4: Type of equipment and storage volume at the central level

	Designation	No.	Type	Storage Volume

CDF Central				Cold chain positive	Cold chain négative
	Refrigerator Bahut	5	Vestfrost MK304	540 L	
	Freezer Bahut	2	Vestfrost MF314		528 L
TOTAL				**540 L**	**528 L**

At the peripheral level

At the peripheral level it was anticipated to strengthen the capacity of the Cantagalo, Lemba, Mezochi and Agua Grande districts with an RC 50 EK refrigerator.
The storage capacity shown in the table below shows that each district possesses a Sibir V 170 GE refrigerator with 55 liters positive storage capacity and at least 3 RCW refrigerators with a positive storage capacity of 18.2 liters per unit. In total, storage at the district level is estimated at 715.4 liters postive and 216 liters negative

Availability of cold chain

a) At the central level

The current storage capacity of the cold chain is sufficient to accommodate the vaccines even with 2 annual supplies for DTP-HepB-Hib. However with the introduction of the new vaccine (PCV-13) in 2012, and acquisition of vaccines for the follow-up campaign against measles expansion will be necessary. This gap can be met by acquiring a cold room of 10 m3 at the central level for a total cost, including installation, estimated at $59,584 USD. Expenditure on the purchase of this cooler is currently making a strong plea to the government for its acquisition by the end of 2011. This extra storage capacity will enable the country to ensure the storage of all vaccines even after the 2nd dose of measles in is introduced in 2013 and the rotavirus vaccine in 2014, with a comfortable margin until 2016 as shown in the table below.

Table 6.1: Capacity and cost (for positive storage) National Store

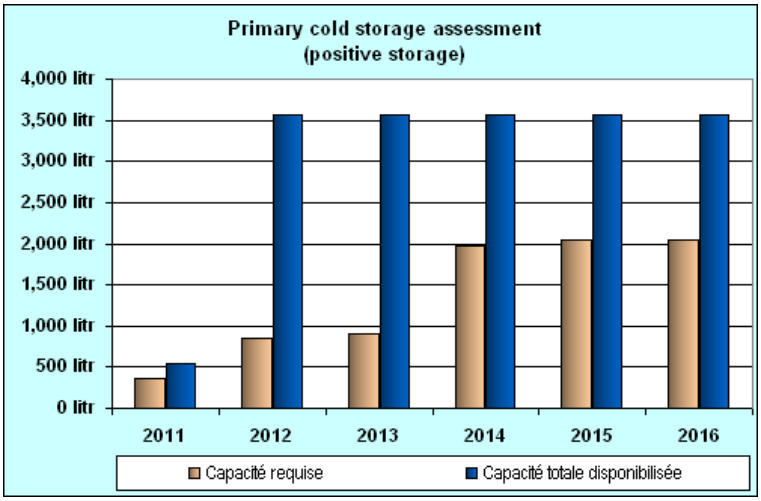
National Depot

		Formulas	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**
A	Total anual volume of vaccine in positive storage	*Figures obtained by multiplying the total number of vaccine doses by the volume per dose*	548 litr	833 litr	888 litr	1.162 litr	1.207 litr	1.210 litr
B	Total positive net capacity of existing cold chain	*#*	540 litr	540 litr	540 litr	540 litr	540 litr	540 litr
C	Estimate of the minimum number of annual shipments required for real cold chain capacity	*A/B*	1.02	1.54	1.65	2.15	2.23	2.24
D	Number of shipments annually	*On the basis of the national vaccine shipping plan*	1	1	1	1	1	1

E	Difference (if applicable)	*((A/D) - B)*	8 litr	293 litr	348 litr	622 litr	667 litr	670 litr
F	Estimated cost of the expansion	*US $*	$0	$39.584	$0	$0	$0	$0

Results of analysis of cold chain needs for immunization at the central level

The chart below shows the availability of storage capacity following the acquisition of the central cold room of 10m3 from 2012.



The evaluation of the storage capacity of the cold chain has taken into account traditional vaccines (including the 2nd dose of measles vaccine, under-utilized vaccines (VAA, DTP-HepB-Hib), pneumococcus vaccine in PCV-13 liquid form to be introduced in 2012, and rotavirus vaccine in its single-dose oral form planned starting in 2014. Additional measles vaccination activities planned for 2012 were also taken into account in this assessment. (Forecast Tool Attached).

b) At the district level

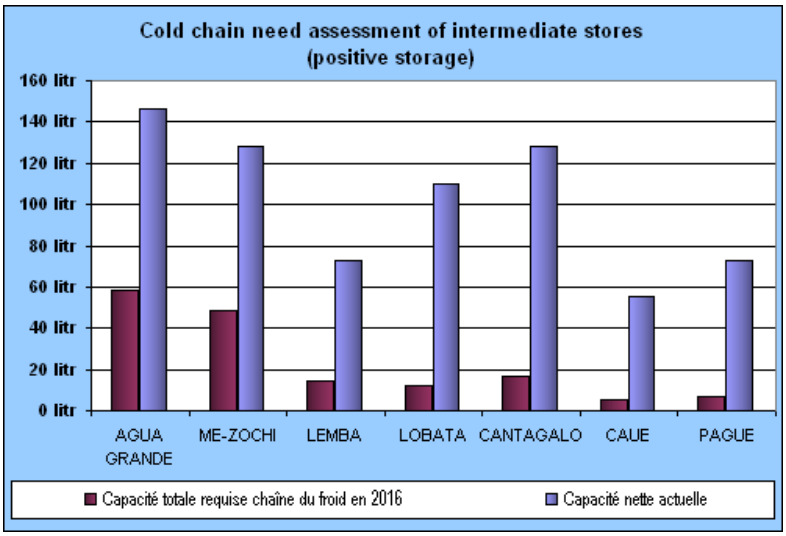
At the intermediate level storage capacity accomodates the introduction of new vaccines for the further period of support as shown in the table below

Table 6.1: Capacity and costs (for positive storage)

		Formula	AGUA GRANDE	ME-ZOCHI	LEMBA	LOBATA	CANTAGALO	CAUE	PAGUE
A	Total volume of vaccines in positive stock.	Figure obtained by multiplying the total number of doses of vaccine by volume per dose	693 lit	577 lit	169 lit	142 lit	187 lit	71 lit	79 lit
B	Positive total net capacity of existing cold chain	#	l46 lit	128 lit	73 lit	110 lit	128 lit	55 lit	73 lit

C	Estimated minimum number of shipments required for the actual capacity of the cold chain	A/B	4.75	4.51	2.32	1.29	1.46	1.29	1.09
D	Number of shipments	Sap basis of the national vaccine distribution plan	12	12	12	12	12	12	12
E	Difference (if Required)	*((JVD) - B)*	**88 lit**	**80 lit**	**59 lit**	**98 lit**	**- 112 lit**	**49 lit**	**66 lit**

The results of analysis of cold chain needs for immunization at the intermediate level shows how much the capacity required of the cold chain remains significantly below the existing capacity. This availability allows the country to introduce such new vaccines and underused vaccines (second dose of measles) without requiring additional equipment.



- Reliability:

Efforts are noted at both central and peripheral levels; all devices are equipped with dial thermometers, and temperatures recorded twice daily. Instructions on how to handle a disturbance in the cold chain were discussed during the training of managers in 2005 (reference MLM modules). However, the contingency plan is lacking at all levels.

In health centers (SC), outdated CDF material began to be replaced. At central level, a relief group exists, but has not been active for three years; appropriate solutions are currently being taken. The repository has three vehicles, including two since 1995; all these vehicles are still functional. The integration of activities within the structures has contributed to development of the EPI. There is no notable need for vehicles currently.

Dry storage capacity

Dry storage capacity is sufficient at all levels as shown in the forecasting tool of vaccines and equipment (forecast) 2011

Evaluation of the Effective Management Evaluation of Vaccines (EGEV)

To ensure proper vaccine management, especially with the introduction of new vaccines, a re-evaluation of this management is recommended. The country intends to complete this assessment before the end of June 2011, with support from WHO and the Sub-regional Working Group immunization. The report of this evaluation will be immediately available to all GAVI and other partners.

4.4.2 Equipment and infrastructure

Immunization services are available in all health facilities in good state of preservation with the required minimum of working equipment, despite their outdatedness, including vehicles. EPI as a whole is well covered by the telephone network.

4.4.3 Immunisation Safety

4.4.3.1 Safety of injections:

The country has opted for self-blocking syringes (AD) since 2002. A national policy document on injection safety has been developed since 2002. ADs are used in 100% of health facilities.

4.4.3.2 Waste disposal:

Waste disposal is done through a collection of scrap materials into containers, burning and landfilling. These provisions are not followed by officials of the DS and the central level because of insufficient training, their own. The construction of incinerators required in the 2003-2007 plan was not followed, for lack of funding, in the same way that sustainability measures are not considered (supply of injection equipment and safety).

With support from WHO, the first incinerator in the district of Agua Grande, where the capital of the country is located, was built in 2011 at the central hospital. The incinerator will improve the system of waste disposal in accordance with WHO recommendations. The expansion plan envisages the construction of three incinerators in remote districts: Lemba, Caue and the autonomous region of Principe. Strategies for mobilizing funds relating thereto will be among the priorities of the CCIA. The Government and partners will spare no effort in implementing this plan to make it effective by 2013

4.4.3.3 Monitoring of AEFI

AEFI surveillance is not performed systematically. The latest survey of immunization coverage showed that fever is by far the most adverse effect cited by interviewees. Only during campaigns do health workers conduct this control.
As part of improving vaccine safety, special efforts must be undertaken to develop standards and procedures for vaccination to overcome the deficiencies noted in the immunization system.

4.4.3.4 Practices

Good nursing practice in handling materials and asepsis were discussed during the training of staff in 2005, but neither technical sheets nor the modules have been developed for this purpose. In the distribution practices of vaccines and diluents, monitoring is done centrally, but is not yet effective at the base. The introduction of the pneumococcic vaccine will be a good opportunity for training / retraining of staff

4.4.3.5 Policy on opened vials

This policy is known to most of the staff, but has not yet been officially recorded in the operating records for a strict application to the base. While this policy is not necessary for the VCP-13, it is quite important for the second dose of measles vaccine.

4.5 Communication

The advocacy for change in behavior of the segment of the population that avoids vaccination is inadequate, including those conducted by service providers and the media. In EPI, there is no focal point responsible for communication. In the national health system, there is a National Center for Health Education which deals with disclosure of all health programs, including EPI. At the level of health districts, there is a focal point that coordinates outreach activities including the EPI. Advocacy activities were conducted with policy makers, for routine EPI, and also for supplementary immunization activities and the introduction of new vaccines.
NGOs, health workers, community health workers, religious leaders, teachers and journalists have been trained in order to strengthen social mobilization activities and awareness on immunization.

A major obstacle to awareness is the fact that dissemination of messages through the media is not free and often financial resources are lacking.

Despite the good performance of its routine EPI, Sao Tome and Principe is part of a sub-region where the average immunization coverage is less than 90% nationally (57% CV for the entire sub-region of Central Africa between January and June 2010). Given the challenges to EPI associated with the introduction of new vaccines and the second dose of measles planned from 2012 and 2013 respectively, and the worsening of wild polio virus spread and importation, particularly in Angola and DRC, and given the high population movement between Angola and Sao Tome and Principe, it is urgent to strengthen routine immunization through a strategic communication plan for immunization in order to achieve the objectives both nationally and regionally. This is the context for the adoption of a strategic EPI communication plan for 2011-2015. This plan aims to improve public support for various immunization interventions by making them sustainable through capacity-building programs for EPI managers, those involved in immunization, community involvement and media professionals at all stages of planning, implementation, monitoring and evaluation.

Other factors also justify the strategic communication plan for immunization:
- Communication for Immunization currently has few health and media professionals trained in its implementation;
- The minimum package of activities (MPA) in Health Centres and Posts includes the communication component;
- Immunization activities in fixed positions or as part of mobile teams and vaccination campaigns require the involvement and participation of the community;
- NGOs operate in the country to fight against diseases preventable by vaccination;
- The need to integrate data collection tools with communication activities among the tools of the ENP;

Opportunities exist in Sao Tome and Principe for the implementation of this fight against other endemic diseases with epidemic potential.
Issues relating to knowledge, skills and practices (KAP) were raised during the latest survey of immunization coverage. It appears that almost 98% of people who care for children and respondents to the questions are either the father or mother. The number of diseases mentioned is low (2 on average). Only 7 people listed all 8 diseases. The diseases most cited are measles and yellow fever. The unavailability of the mother is the most important reason for non-vaccination of children followed by a lack of information.

4.6 Management of the Program

EPI began in Sao Tome and Principe in 1979 and had as targets children aged under 1 year and women of childbearing age. Since the establishment of EPI in STP, the program has always operated as a vertical program. Since 1997, the EPI was integrated within the Program for Reproductive Health, under the supervision of the Directorate of Health Care. The ENP is composed

of a central core coordinated by a manager and sub-nuclei in the 7 Districts, under the responsibility of medical directors of each district.

4.6.1 Planning

Immunization activities are identified as priorities in the National Health Development Plan (PNDS). A multiyear plan for immunization covering 2003-2007. To face the new challenges contained in the GIVS and in line with the regional and sub-regional cMYP 2008 - 2012 was developed, approved and implemented. It contained the following objectives:

- Maintain the end of the spread of wild polio virus;
- Maintain the elimination of maternal and neonatal tetanus;
- reduce measles morbidity by 90% and mortality by 95%;
- improve routine immunization coverage to reach 99% for all antigens in all districts;
- introduce new vaccines (pneumococcal and rotavirus) and underused vaccines (Hib).

4.6.2 Coordination

Coordinated response at national level is ensured by the Inter Agency Coordinating Committee (IACC), chaired by the Minister of Health and composed of most of the partners that support the EPI. This Committee is supported by a Technical Committee consisting of senior EPI, UNICEF and WHO technicians who prepare technical files on the different aspects (technical, communication, finance and logistics). The IACC meets regularly 3 times a year to validate, monitor and evaluate the annual action plan program. However, there is a weak commitment from civil society

4.6.3 Monitoring and Evaluation

Monitoring helps to ensure the monthly collection of a series of indicators in 100% of districts. Data management at the operational level is reasonable. Despite some delays, we see a completion percentage of monthly immunization reports to a good level (100%). Inspections at all levels are signs of good quality and quantity.

In 2006, the scheduled inspections were performed at 100%: 100% of inspectors were trained in inspection techniques and 100% of these supervisors have a monitoring guide.

MICS surveys conducted have helped make the comparison between the data from the information system and those from MICS. This comparison revealed that there was no significant difference between these two sources of information. This has again been confirmed by recent immunization coverage survey conducted from October 20 to November 15, 2007, which proves in a certain way the reliability of the system.

4.7 Capacity reinforcement

To meet demand satisfactorily, EPI needs qualified and available human resources. Ever since the EPI was integrated into the reproductive health program and decentralization was implemented, on-the-job training activities have been conducted in all health facilities targeting middle management in terms of planning, logistics, cold chain, monitoring and evaluation.

Some executives have followed, externally, training in management of immunization services at district level called *MLM Training*. They provide considerable support to the implementation of continuing education programs nationally. However, the newly hired staff is not trained. In this regard, an EPI module was also integrated into the curricula of the School of Health Management Training. It remains to adapt this module to the content of MLM.

4.8. Financing of the immunization system

Three types of funding for EPI activities exist: the contribution of the state, the community and the development partners.

4.8.1 State

Until 2006, much of EPI financing was provided by government partners. From 2008 the government began to invest in the purchase of traditional vaccines and the co-financing of new and underused vaccines with GAVI.

It is important to note that in the structure of expenditure on conventional vaccines used in routine EPI, the share of state funding increased from USD 334,199 USD in 2006 to 453,710 in 2010. The section devoted exclusively to the purchase of vaccines and vaccination materials has been created.

The dependence of the EPI on aid from partners results in the following:

- Lack of financial independence in immunization
- Incomplete implementation of a strategic and clear annual EPI plan of action
- Delays in funding and in implementing activities
- A decrease in the effectiveness of the EPI

Other state contributions in financing the ENP relate to shared expenses (personnel expenses, costs of repair and maintenance and operating costs of the program structures). The Government's determination regarding vaccine independence is obvious.

The adoption of the strategy for reducing poverty in the framework of the * Heavily Indebted Poor Countries Initiative (HIPC) offers the country an opportunity to access additional funding.

4.8.2 Partners

Main partners who have funded the expenses of the EPI have been: GAVI, UNICEF, WHO and Portuguese NGOs Valle-Flor and UNFPA .The figures available are those of WHO, UNICEF, GAVI, UNFPA and the government, which we represent here
In 2010, of the aggregate of the total funding of EPI activities, 60% is attributed to the government, 3% to UNICEF, 13% WHO, 25% to GAVI and 2% to UNFPA.

Table No.: represents expenditure from partners and the Government of EPI from 2006 to 2010 including the purchase of vaccines

Funding sources (U.S. $)	Years				
	2006	2007	2008	2009	2010
GOVERNMENT	114 234	113 050	92 544	105 911	271 615
WHO	28 750	31 650	18.000	19.000	58.850
UNICEF	36 472	45 010	29 861	18 600	13 090
GAVI	18 600	27 600	32 759,5	83 088,5	167 536
	7.000	7.500	9.000	11.000	10.000
TOTAL	205.056	224.800	164.165	135 511	449 151

5. SUMMARY OF STRENGTHS, WEAKNESSES, OPPORTUNITIES AND THREATS OF EPI

The analysis previously made on the demographic, political, institutional, economic and health context has helped to highlight the strengths, weaknesses, opportunities and threats of the EPI system.

5.1 Internal environment

Table XI: Summarizes the strengths and weaknesses of the EPI

	Strengths	Weaknesses
Health System	• System Network of health infrastructures adequate and well distributed • EPI program decentralized • Immunization services are available in 26 of the 27 health facilities in the country. • Provision of tools, including transport, equipment and computer equipment, communication technology (phone, fax, Internet)	• NHDP is being updated • Strong financial dependency on the EPI partners. • Low staff motivation • Lack of multisectoral commitment • Inadequate data collection on Health Information System
Provision of Vaccination services	• Vaccination coverage >80% in all districts and for all antigens • Dropout rate DTC1/DTC3 and BCG / VAR <10% • 100% completeness and timeliness of reporting at the national level • Integrated Health Services (ITNs, Vitamin A and deworming) at all levels • Ability to vaccinate children during the visits of mothers to health centers including children hospitalized	• Proportion of children fully vaccinated at one year: 77%

Supply and quality of vaccines	• Vaccine supply by UNICEF. • No disruptions in vaccine at all levels • Loss rate lower than 10% for pentavalent, OPV and TT	• Lack of a national quality control laboratory • Persistence of vaccine wastage rates >10% for BCG, measles and VAA • Lack of standards and procedures for vaccine management at all levels • Tools for collecting data not standardized • No knowledge of the computer tool for vaccine management • Alert thresholds are not taken into account in ordering vaccines • Weak enforcement of bundling • Lack of ANR
Logistics • **DC Cold Chain** • **Safety of Injections** • **Transport ation**	• CDF at central and peripheral levels meet required standards • sufficient storage capacity at intermediate and peripheral levels • Existence and use of safety boxes at all health facilities. • Good flexibility of the Cold chain	• Lack of staff in the Logistics department of EPI • Insufficient storage capacity at the central level with the introduction of new vaccines in 2012 • Inadequate waste incinerators and vaccine. • Means of transport outdated
Epidemiological Surveillance	• Network of functional epidemiological monitoring • Surveillance reports complete and timely	Lack of notification of suspected cases of diseases preventable by vaccination Lack of system of routine surveillance of AEFI
Social mobilization	• Lack of notification of suspected cases of diseases preventable by vaccination • Lack of system of routine surveillance of AEFI	• Insufficient human resources at central level • Lack of an integrated communication plan for EPI that targets real problems of communication • High cost of production and dissemination of communication materials • Low activity of the IEC • Lack of social mobilization component within the EPI
Coordination/Ma nagement	• ICC functional • Multi-form support of partners (WHO, UNICEF, UNFPA, GAVI)	• No involvement of civil society • Insufficient staff at the coordination of the EPI • Poor coordination of different partners •
Capacity Development	• A national team in MLM outside country	• No release of MLM course at the Country level

	• EPI Modules in the curricula of basic training for nurses • Existence of a network of trained AFP focal points. • Allocation of staff to EPI	• Lack of Pool of trainers • New health personnel not trained on management of the EPI
Supervision	• Supervision of active surveillance of AFP functional	• Irregularities in supervision at all levels • Poor quality of supervision
Financing	• Availability of government budget financing line for EPI	• Low amount allocated • Low funding of monitoring activities • High dependence on external financial resources

5.2 External eenvironment

Table XII: Opportunities and threats to the ENP

Areas	Opportunities	Threats
National level	• Prospects of national resources from oil production • Possiblility of establishing partnership agreements • The external debt relief for countries • Adoption of Poverty Reduction Strategy Document under the HIPC Initiative • Access to various international financing mechanisms (UNICEF, WHO, GAVI)	• Strong EPI financial dependence on external funding • Political instability • Low economic growth • Increased poverty
World level	• Adoption of GIVS • Reforming UN System • GAVI Funding	• Global Financial Crisis • Resurgence of FSP circulation in the countries of the Sub-region • Resurgence of outbreaks of measles in the region

Table XIII: Problem identification and prioritization criteria

Areas	Problems listed in order of priority	Priority
Coordination/Management	• Poor collaboration with civil society	3
	• Poor coordination of different partners	3
Development of capacities	• Health personnel not trained on new integrated management of the EPI	2
Service Delivery	• Low percentage of children fully immunized	1
	• Inadequate and irregular supervisión	1
Logistics **Supply and quality of vaccines**	• Persistence of vaccine wastage rates	1
	• Inadequate incinerators	3
	• Lack of ambient storage space/store at the central	3
	• Obsolescence of vaccination equipment	3
	• Inadequate capacity of the cold chain at central level	2
	• Lack of regulations and standards for the CDF and EPI vaccine management	3
	• Means of transport obsolete	1
	• HR inssufficient at central level	1
Epidemiological surveillance	• Low funding of supervision	3
	• Lack of monitoring system MAPI	3
	• Lack of analytical capacity to analyze fecal samples in suspected cases of polio by the national laboratory	4
	• Lack of notification of suspected cases of diseases preventable by vaccination	3
Awareness and Social mobilization	• Lack of social mobilization component within the EPI	2
	• Requirements for payment by the media	2
	• Low level of awareness	2
Financing	• High dependence on external financial resources	1
	• Low funding of monitoring activities	3

Priority level: 1 = High priority, priority 2 and 3 lowest priority, 4 low priority

6. NATIONAL PRIORITIES, GOALS, STEPS, REGIONAL AND GLOBAL GOALS 41

Table XIV: National Priorities, Objectives, Steps, regional and global goals

<table>
<tr><th>Problèmes/Priorités</th><th>Objectifs</th><th>Etapes</th><th>Buts régionaux et mondiaux</th><th>Ordre de priorité</th></tr>
<tr><td>Faible pourcentage d'enfants complètement vaccinés à 1 an</td><td>Accroître le pourcentage d'enfants complètement vaccines à 1 an de 77% à 90% d'ici 2015</td><td>2012: 82%
2013 : 85%
2014 : 90%
2015 : 90%
(pour tous les antigènes)</td><td>Au plus tard en 2010 tous les pays ont une couverture de la vaccination de routine de 90% au niveau national et d'au moins 80% dans tous les districts</td><td>1</td></tr>
<tr><td>Taux de perte de vaccins élevés par rapport aux objectifs régionaux</td><td>D'ici 2015, réduire les taux de pertes des antigènes :
BCG : 57 à 40%

VAR : 39 à 25%
VAA : 25 à 10%</td><td>
<table>
<tr><th></th><th colspan="5">Objectifs de Taux de Pertes en Vaccin</th></tr>
<tr><th>Type de Vaccin</th><th>2011</th><th>2012</th><th>2013</th><th>2014</th><th>2015</th></tr>
<tr><td>Vaccins Traditionnels</td><td></td><td></td><td></td><td></td><td></td></tr>
<tr><td>BCG</td><td>57%</td><td>45%</td><td>45%</td><td>45%</td><td>40%</td></tr>
<tr><td>Polio (VPO)</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td></tr>
<tr><td>Rougeole</td><td>39%</td><td>30%</td><td>25%</td><td>25%</td><td>20%</td></tr>
<tr><td>TT - Femmes enceintes</td><td>6%</td><td>10%</td><td>10%</td><td>10%</td><td>10%</td></tr>
<tr><td>Vaccins sous-utilisés</td><td colspan="5"></td></tr>
<tr><td>Fièvre jaune</td><td>25%</td><td>15%</td><td>10%</td><td>10%</td><td>10%</td></tr>
<tr><td>DTC-HepB-Hib3</td><td>3%</td><td>5%</td><td>5%</td><td>5%</td><td>5%</td></tr>
<tr><td>Measles</td><td></td><td>30%</td><td>20%</td><td>20%</td><td>20%</td></tr>
</table>
</td><td>Réduire le taux de perte de tous les antigènes selon les normes recommandées</td><td>1</td></tr>
</table>

		Nouveaux vaccins PCV-10 — 5% — 5% — 5% — 5% ROTAVIRUS — — — 5% — 5%		
Vétusté et insuffisance d'entretien des équipements de vaccination et transport	D'ici 2015, doter le niveau central d'une capacité de stockage suffsante	2012 : chambre froide au niveau central 2012- 204 acquérir 50% des équipements informatiques 2014 à 2016 acquérir les autres 50%	Au plus tard en 2010 tous les pays ont une couverture de la vaccination de routine de 90% au niveau national et d'au moins 80% dans tous les districts	1
Forte dépendance financière des ressources externes	D'ici 2015, accroître le financement national pour les activités de vaccination	Le Gouvernement devra respecter ses engagements par rapport au cofinancement GAVI	Assurer la pérennité financière pour la vaccination	1

7. VISION AND OBJECTIVES OF THE EPI

7.1 Vision

By 2015:

- Vaccination as a priority for achieving the Millennium Development Goals (MDGs)
- Vaccinate more people against more diseases
- Fairness and equal access to immunizations under the national schedule is guaranteed to all children, all adolescents and all adults
- The integration of immunization activities to priority interventions in health development is a reality regardless of the social, political and economic environment.

7.2 Objectives

7.2.1 General objective:

Contribute to reducing morbidity and mortality related to diseases preventable by vaccination.

7.2.2. Specific objectives:

By 2015, maintain immunization coverage at 95% for all antigens at the national level among children aged 0 to 11 months and TT for pregnant women according to Table XV below

Table XI: Baseline and projected goals of vaccination coverage contained in the full multi-year plan 2012-2015

Objectives of vaccine coverage

Vaccine type	**2012**	**2013**	**2014**	**2015**
Routine vaccination	(%)	(%)	(%)	(%)
Traditional vaccines				
BCG	99%	99%	99%	99%
TT –Pregnant Women	95%	98%	98%	98%
Measles	95%	98%	98%	98%
Polio (OPV3)	98%	98%	98%	98%
Underused vaccines				
Yellow fever	95%	98%	98%	98%
DTC-HepB-Hib(3)	98%	98%	98%	98%
Measles 2nd dose	80%	82%	85%	90%
New Vaccines				
PCV-13	90%	95%	98%	98%
ROTAVIRUS(1)			98%	98%

- By 2015, increase from 77% to 90% the percentage of children fully immunized at 1 year of age:

- Reduce the rate of loss of vaccine for all antigens according to Table XVI below

Table XVI: Targets for reducing wastage of vaccines 200-2012

	Objectives of vaccine wastage rate				
Vaccine type	2011	2012	2013	2014	2015
Traditional vaccines					
BCG	57%	45%	45%	45%	40%
Polio (OPV)	10%	10%	10%	10%	10%
Measles	39%	30%	25%	25%	20%
TT- Pregnant women	6%	10%	10%	10%	10%
Underused vaccines					
Yellow fever	25%	15%	10%	10%	10%
DTC-HepB-Hib3	3%	5%	5%	5%	5%
2nd dose measles		30%	20%	20%	20%
New Vaccines					
PCV-10		5%	5%	5%	5%
ROTAVIRUS				5%	5%

2 With regard to the introduction of new vaccines

- o By the end of 2012, introduce the neumoccoccic vaccine and 2nd dose measles in the routine EPI
- o By the end of 2014 to introduce the rotavirus vaccine
- o By 2012, provide the central level with a cold room of 10 m 3

In the area of the acceleration of global initiatives

- By 2015, increase national financing for immunization activities by $ 647 113 USD in accordance with the CHP costing too

By 2015, maintain and enhance the level of current epidemiological surveillance

8. STRATEGIES AND ACTIVITIES BASED ON GOALS BY COMPONENT

Table XVII: Strategies, activities and indicators of CHP 2012 - 2015 by component.

OBJECTIVES	STRATEGIES	ACTIVITY	INDICATORS
By 2015, maintain coverage for all antigens at national level over 95%.	**Strengthening national capacity**	Train all staff of health facilities linked to vaccination, in MLM	Number of health personnel in MLM form
		Organize training of health staff on the introduction of new vaccines by levels	Report levels of training on the introduction of new vaccines
		Implement the integral communication plan for EPI	Activities of the integrated communication plan for EPI implemented
		Produce communication packets	Packet communication products
		Train 160 Community Health Workers (CSA) on communication strategies for communities	Number of ASC formed on communication strategies
		Evaluate the implementation of the Communications Plan in 2012	Evaluation report on the implementation of the Communications Plan
		Relaunch the quarterly meetings of monitoring and evaluation of EPI activities	Number of meetings for monitoring and evaluation reread

	Strengthening program monitoring and evaluation	Organize external evaluation of the EPI in 2012	Report of external evaluation of EPI available.
		Revise / update the monitoring tools	Monitoring tools updated
		Perform supervisory visits in every six months for the central level and quarterly at the District level	No. of supervisory visits carried out
By 2015, maintain the performance obtained under the supervision	**Strengthening epidemiological surveillance**	Develop the Active Surveillance Plan	Active monitoring plan available
		Produce quarterly epidemiological newsletters to ensure information at all levels	Number of epidemiological newsletters produced
		Revise / update the monitoring tools	Revise / update the monitoring tools
		Achieve 7 sessions of training of trainers on surveillance of AFP cases for communities	Number of training sessions for trainers on surveillance carried out by trainers
		Organize a response in case of discovery of wild poliovirus and yellow fever	Existence of the response plan in case of discovery of wild poliovirus and yellow fever
By 2015, reduce the loss of antigens:	**Strengthening the management system for vaccines**	Use small-dose vials	Small-dose vials are routinely used
		Spread the opened vial policy	Vial policy started within 7 Districts

		Providing health districts computerized tools for managing vaccines	The 7 districts are equipped with tools for vaccine management
		Adapt the tools of management with respect to new vaccines	Management tools are adapted from the new vaccines
By 2015, provide 100% of districts with CDF hardware	**Strengthening the logistics system**	Equip the central EPI cold room of 10 m3	Supplies and CDF equipment installed in the target institutions
		Control the means of transport for EPI	Means of transport available for EPI.
		Develop a specific plan for maintenance facilities for the CDF and transport	Existence of specific plans for maintenance facilities for the CDF and transport
		Build a new store to store vaccines for the EPI Central	Existence of a storage of vaccines for the EPI Central
		Build 6 incinerators for districts	Number of incinerators constructed
By 2015, increase national financing for immunization activities	**Strengthening mechanisms for ongoing funding of EPI**	Strengthen advocacy for the availability of resources in the budget of the State	Number of reports advocating for the availability of resources, given before decision makers
		Strengthen advocacy for increased national budget allocated to health	Proportion of the State budget allocated to EPI

9. SCHEDULE OF MAJOR ACTIVITIES

Table XVIII: Calendar of Events 2012 -2015 cMYP.

MAIN ACTIVITIES	2012	2013	2014	2015
Service delivery				
Organize EPI micro-planning workshops	X	X	X	X
Expand outreach and mobile teams	X	X	X	X
Perform supervisory visits every six months for the central level and quarterly at the District	X	X	X	X
Revive the quarterly meetings of monnitoring and evaluation of EPI activiities	X	X	X	X
Organize external evaluation of the EPI in 2012	X			
Revise/update the monitoring tools	X			X
Strengthening Communications for EPI				
Implement the integral communication plan for EPI	X	X	X	X
Produce communication packets	X	X		
Train 160 Community Health Workers (CSA) on communication strategies for communities		X	X	
Evaluate the implementation of the Communications Plan in 2012			X	
Strengthenning of epidemiological surveillance				
Develop an active surveillance plan	X	X	X	X
Produce quarterly epidemiological newsletters to ensure feedback at all lelvels	X	X	X	X
Revise/update the monitoring tolos		X		
Carry out 7 training seessions for trainers on surveillance of AFP cases for communities		X	X	
Organize a response in case of discovery of wild poliovirus and yellow fever	X			
Strengthening the management system for vaccines				

Popularize the vial policy	X	X	X	X
Providing health districts computerized tools for managing vaccine		X	X	
Adapt management tools with respect to new vaccines	X			
Strengthening the logistics system				
Order equipment and materials from CDF	X	X	X	X
Control the means of transport for EPI	X	X	X	X
Building a new cold room for storage of vaccines for the EPI Central	X	X		
Build 6 incinerators for districts			X	
Capacity building				
Train all staff of health facilities linked to vaccination, in MLM		X	X	
Organize training of health staff on the introduction of new vaccines, by level	X	X	X	
Strengthening mechanisms for ongoing funding of the EPI				
Strengthen advocacy for the availability of resources in the budget of the State	X	X	X	X
Strengthen advocacy for increased national budget allocated to health	X	X	X	

10. ANALYSIS OF COSTS AND FINANCING OF THE PROGRAM

10.1 Methodology

Collection of data that have been introduced in the sheet No.1 "Data Entry" was made from the following sources:

Regarding:

- macro-economic indicators and population (National Statistics Institute, 2010)
- The data relating to vaccines and injection materials (Ministry of Health, 2010)
- The data relating to staff costs (Ministry of Health, 2010)
- Data on material cold chain logistics and transportation (Ministry of Health, 2010

10.1.1 Cost of the base year

a) Basic indicators for the year of reference

According to Table XIX, the total program cost was $ 544,357, 91% for the cost of immunization and 9% for shared costs for the year 2010. The cost of vaccines and injection materials represented 14.6% of the total cost of the program and 54.7% of government funding.

Table XIX: basic indicators for the base year (2010)

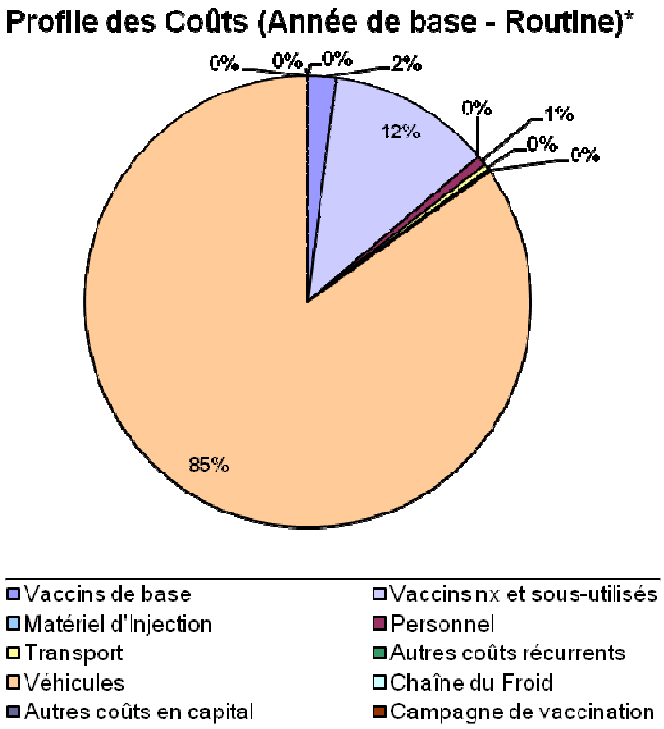
Indicator for the reference year 2010	**2010**
Total costsa of Vaccination	$496,722
Campaigns	$0
Routine vaccination	$496722
% vaccines and injection materials	14.6%
Total shared costs	$47,635
% of total shared costs	9%
TOTAL	$544,357

The cost of routine immunization has been estimated at $ 3.1 per capita, equivalent to 0.26% of GDP for that year. The cost per child vaccinated for three doses of DTP stands at $ 93.9.

Overall, the total cost of the program for year 2010 amounted to $ 544 357. The main challenge of the vaccination program in Sao Tome & Principe is the maintenance of high coverage above 90% nationally and in all Districts. Indeed, the country remains one of the countries of the region to have higher rates of high immunization coverage for all antigens. Maintaining this trend will require significant resources in terms of training, regular supervision, hence the heavy weight of other recurrent costs (79%) in the cost profile for the base year.

Considering the low demographic weight, the basic vaccines and new vaccines and underused (Yellow fever and Hepatitis B) represent only 1.8% and 10.8%. Given the integration of immunization activities in that of reproductive health, personnel costs represented only 7.3% of total program cost.

Figure 6: Profile of the costs of vaccination in 2010 in STP by topic



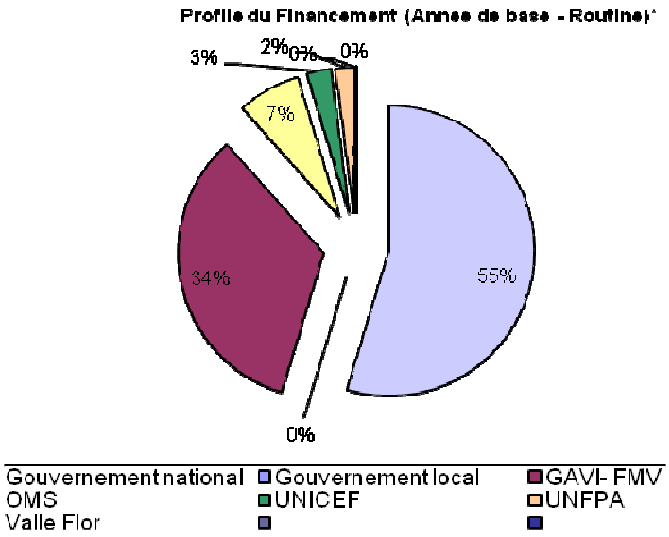
b) The funding profile for the base year

Several institutions involved in financing of health in general and immunization in particular in Sao Tome – mainly the state, which 55% of immunization expenses in 2010 compared to 34% for GAVI, 7% for WHO, UNICEF 2% and 1.8% for UNFPA.

The state contributes to the purchase of basic vaccines through a budget line for vaccine procurement and strengthening the cold chain. The state uses the chain of UNICEF, which enables to ensure quality and to obtain affordable prices. The state also participates in staff costs and supports virtually all expenses related to supervision activities and outreach.

The state contributes to the purchase of basic vaccines through a budget line for vaccine procurement and strengthening the cold chain. The state uses the chain of UNICEF, which enables to ensure quality and to obtain affordable prices. The state also participates in staff costs and supports virtually all expenses related to supervision activities and outreach.

Figure 7: Financing of the base year (2010) by financing sources



10.1.2 The Future Costs of the Program from 2012 to 2016.

a) Need for future costs by heading

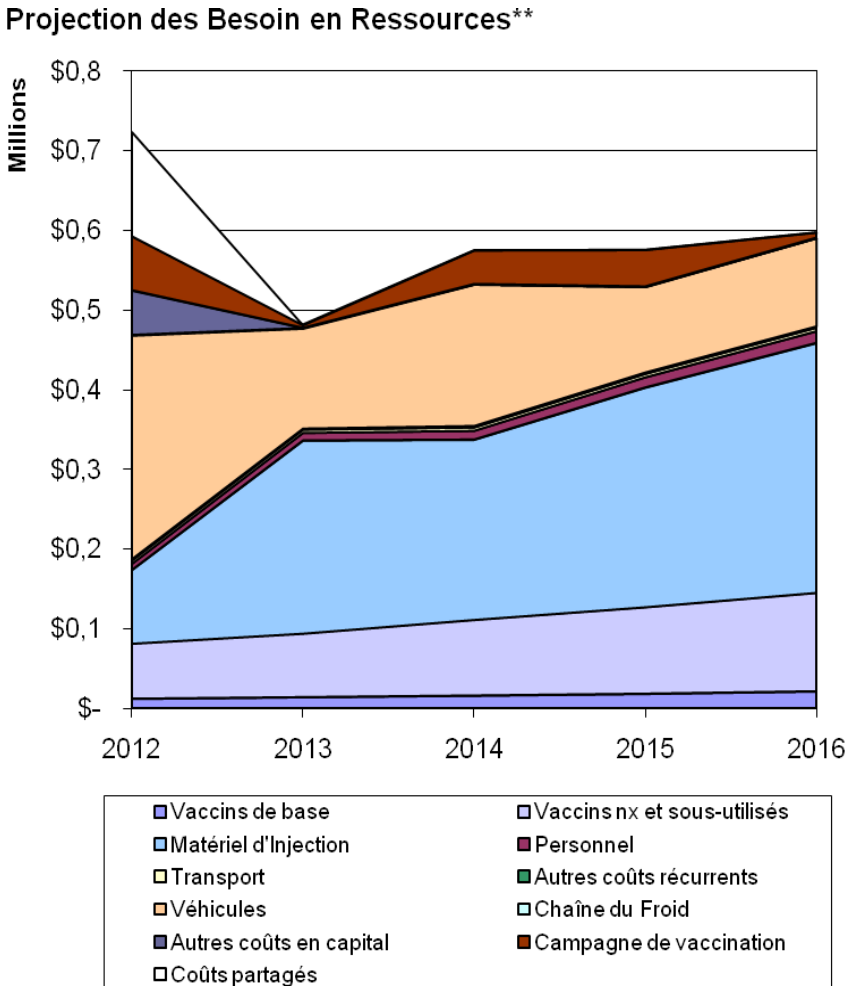
Resource requirements for the period 2012 to 2016 amounted to $3,335,671. Given the challenges of the introduction of pneumococcal in 2012 and the second dose of measles in 2013, program costs will certainly grow significantly in terms of costs of new vaccines, needs additional equipment in the cold chain and in other recurrent costs, including the needs for capacity building for staff. The table below shows the evolution of overall resource needs for the period 2012 to 2016 and major items of expenditure over the period.

Table XXI; Evolution of resource requirements for immunization from 2012 to 2016

Resource requirements	**2012**	**2013**	**2014**	**2015**	**2016**	**2012 - 2016**
Total need	**$857,726**	**$674,392**	**$770,154**	**$772,428**	**$796,039**	**$3,870,739**
Growth rate	58%	-21%	14%	0,9%	1%	
Routine	**$727,420**	**$674,392**	**$770,154**	**$772,428**	**$796,039**	**$3,740,433**
% Vaccines and injection materials	21%	51%	45%	54%	59%	46%

As can be seen on the graph below, the largest items of expenditure will mainly concern the vaccines. The influence of new vaccines led the proportion of vaccines against the total cost of the Programme to increase from 21% in 2012 to 59% in 2016, with an average for the period of 46%.

Figure 8: Table XXI; Evolution of resource requirements for immunization from 2012 to 2016



Strengthening the capacity of the cold chain by building a cold room in 2012 is also a source of increased cost for the program throughout this year.

Figure 9: Evolution of costs by strategy from 2012 to 2016

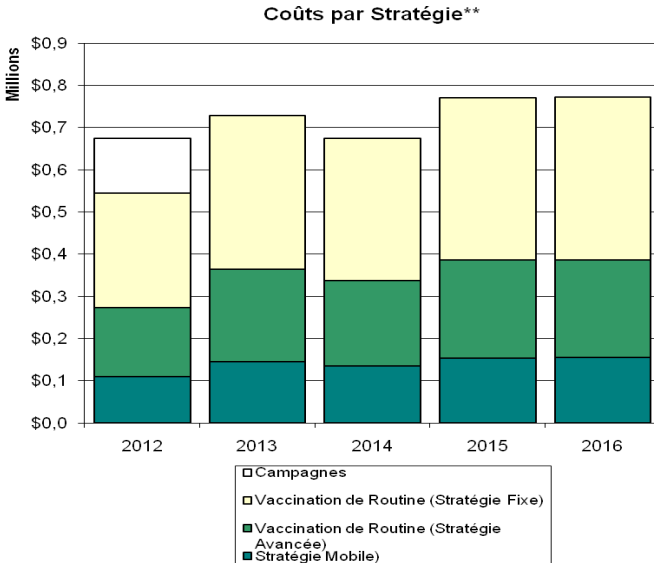


Table XXII below outlines the resource requirements by entry

Table XXII: resource requirements by budget from 2012 to 2016

	Estimated annual costs in $U.S.					
Budget Item	**Base year 2010**	**2012**	**2013**	**2 014**	**2 015**	**2 016**
Recurring costs for routine immunization						
Vaccines (only for routine vaccination)	**68.713**	**174.305**	**336.442**	**337.514**	**402.758**	**458.515**
Traditional vaccines	9.948	11.851	13.869	15.896	18.200	21.273
New vaccines	58.765	162. 453	322. 573	321. 617	384. 558	437.242
Injection supplies	$3.639	$7.904	$9.400	$10.950	$12.557	$14.396
Sub total vaccines	72.352	182.209	345.842	348.464	415.315	472.911
Pay staff						
Salaries of full-time staff	$1.342	$2.737	$2.792	$2.848	$2.905	$2.963
Subsistence allowances for mobile vaccination teams	39.046	42.077	59.769	61.604	62.836	64.092
Sub Total Personnel	40.388	44.815	62.561	64.452	65.741	67.056
Transpotation	10.243	11.457	11.780	12.541	12.938	13.246
Maintenance and general costs	$7.123	$32.730	$33.593	$37.151	$40.979	$42.130
Training	$0	$17.340	$10.404	$15.918	$5.412	$5.520
Social mobilization and IEC	$0	$15.300	$15.606	$15.918	$16.236	$16.561
Epidemiological surveilance	$0	$3.060	$5.202	$6.367	$5.412	$6.624
Program administration	$279.075	$136.233	$75.080	$116.733	$54.122	$55.204
Other recuurrent costs	$135.177	$110.161	$110.161	$110.161	$110.161	$110.161
Subtotal other recurring costs	**431.618**	**326.281**	**261.826**	**314.789**	**245.260**	**249.446**
Total recurrent costs	544.358	553.305	670.229	727.705	726.316	789.413
Equipment costs for routine immunization						
Vehicles						
Cold Chain equipment		55 999				
Buildings		49.980				
Other equipment	$0	$68.136	$4.162	$42.448	$46.112	$6.624
Sub-total equipment costs		$174.115	$4.162	$42.448	$46.112	$6.624
Sub-total campaign costs	**$0**	**$130.306**	**$0**	**$0**	**$0**	**$0**
TOTAL	**$544.357**	**$857.726**	**$674.392**	**$770.154**	**$772.428**	**$796.039**

b) Funding Program 2012 - 2016

The methodology for the assessment of future funding was, in regard to state funding, to consider funding provided, any funding which is based in the national budget passed in the Finance Act each year. A budget line for vaccine procurement exists since 2007. This line also serves to finance the quote by the Government through the cofinancing of new vaccines. To this end, for all expenses of vaccination, notably the purchase of basic vaccines and for vaccine financing, such expenditure is regarded as assured as the state designates more than $ 20 000 to it every year. The same situation applies with the cost of personnel and building maintenance. The state also has a budget line for monitoring and control of diseases; the line is used as part of the Fight Against Endemic Diseases.

With regard to partners, funding for which the protocols of cooperation were signed and the running costs were considered insured. However, future intentions were considered as likely funding.

As indicated above, the program cost from 2012 to 2016 will experience strong increases, especially from 2012, with the successive introduction of new vaccines, including pneumococcus in 2012 and the second dose of Measles in 2013. The Government, which is already involved with the purchase of vaccines, will continue to fund all the basic vaccines, in addition to its contribution to new vaccines that will be introduced with GAVI support. Also, the purchase of vaccines continues to be insured by the Government, with support from GAVI and UNICEF. As it is a situation of lasting cooperation over time, funding classified as "likely" will be funds negotiated in cooperation with these institutions.

c) The financial gap

Table XXIII: Evolution of finance and financial gap from 2012 to 2016

Resource requirements, Financing and Gap	**2012**	**2013**	**2014**	**2015**	**2016**	**Avg. 2012 - 2016**
Needs and resources	**$857.726**	**$674.392**	**$770.154**	**$772.428**	**$796.039**	**$3.870.739**
Needs and resources (routine vaccination)	**$727.420**	**$674.392**	**$770.154**	**$772.428**	**$796.039**	**$3.740.433**
Per capita	$4,3	$3,9	$4,3	$4,3	$4,3	$4,2
Per child DTC3	$128,8	$116,7	$130,3	$127,7	$128,7	$126,5
Total Funding Assured	**$469.308**	**$472.859**	**$522.747**	**$542.092**	**$556.569**	**$2.563.576**
National Government	$101.264	$53.510	$56.253	$59.677	$64.297	$335.001
Local Government						
GAVI- FMV	$313.009	$378.401	$394.124	$433.191	$439.251	$1.957.976
WHO	$42.060	$14.404	$43.203	$5.000	$11.624	$116.292
UNICEF	$11.904	$15.400	$18.000	$32.969	$31.396	$109.669
UNFPA	$1.071	$11.144	$11.167	$11.256	$10.000	$44.638
Valle Flor						
Financial gap (Fin. Assured)	**$388.418**	**$201.533**	**$247.407**	**$230.336**	**$239.469**	**$1.307.163**
% resource requirements	45%	30%	32%	30%	30%	34%

Total Probable Financing (Not Assured)	**$388.416**	**$201.533**	**$247.405**	**$230.337**	**$239.471**	**$1.307.161**
National government	$250.470	$185.927	$199.957	$208.688	$217.389	$1.062.432
Local government						
GAVI- FMV						
WHO	$82.646	$10.000		$15.648	$15.520	$123.815
UNICEF	$55.300	$5.606	$47.448	$6.000	$6.561	$120.915
UNFPA						
Valle Flor						
Financial gap (Fin. Assured and Probable)	**$2**	**$0**	**$2**	**-$1**	**-$1**	**$2**
% of resource requirementns	0%	0%	0%	0%	0%	0%

As can be seen, the financial gap between resource requirements and assured funding becomes important in 2012 because of the introduction of new vaccines. These differences, in their composition, concern mainly vaccines, injection materials, other recurrent costs and other capital assets. The charts below show the development and probable funding guaranteed from 2012 to 2016.

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Figure 10: Projection of funding from 2012 to 2016

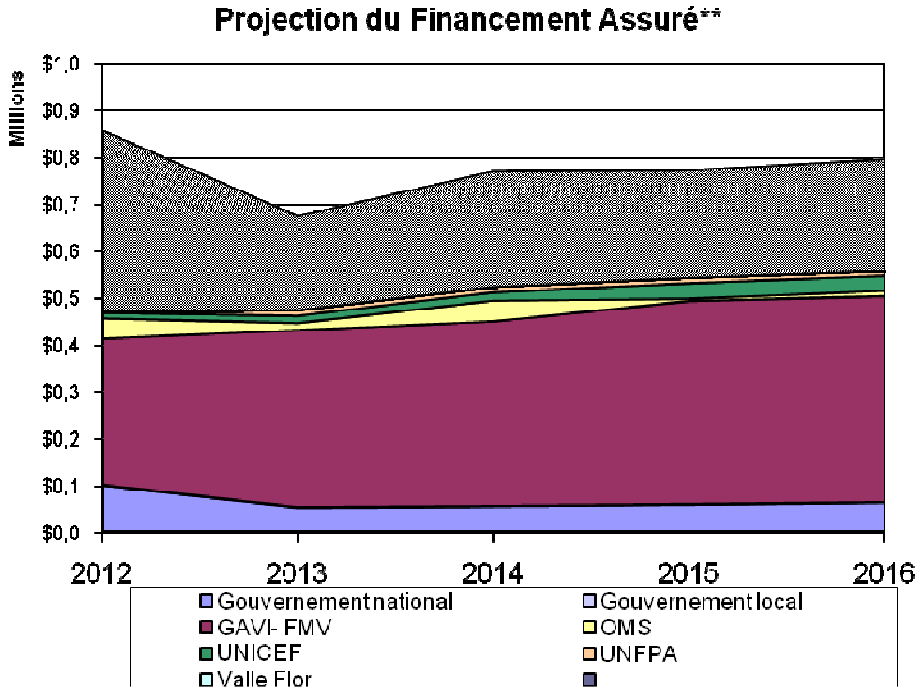
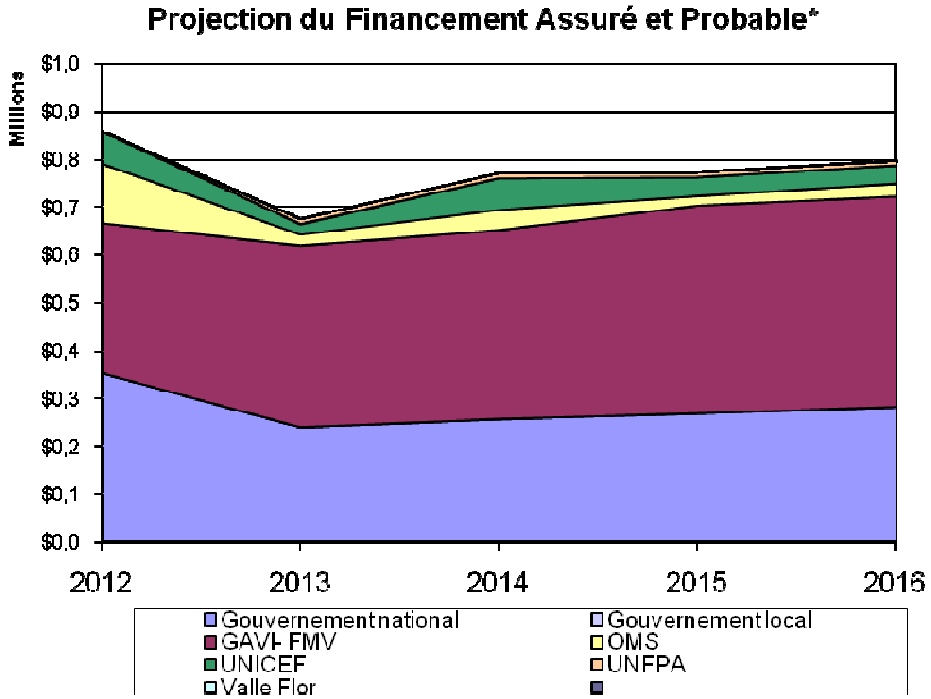


Figure 11: Projection of funding secured and probable 2012 to 2016



d) Strategies for financial sustainability of the Programme 62

Issues of financial sustainability of the program arise primarily in terms of streamlining the management of available resources. Indeed, vaccines are purchased for example by the Government (traditional vaccines), UNICEF (vaccines traditional) and GAVI (new and underused vaccines). This same applies to the material of the cold chain. The state uses the chain of UNICEF for its purchases and, ultimately, we often find ourselves with the same budgeted expenditure on both sides.

Government Funds are transferred to UNICEF every year without finding out if there are real needs for funding. There is therefore need for the state to better coordinate its efforts with partners to better allocate resources. In order to sustain the financing of vaccine supply, the expenditure on the state budget should remain and increase annually to reflect changing demographics.

The state should ensure the construction of a cold room with large capacity in 2012 as part of the stockage of the new vaccines which will be entering the EPI. The State could also raise the level of its financing to raise in excess of $ 0.20 as currently recommended by GAVI.

Table XXV: The macro economic and financial viability of 2012 to 2016

Macroeconomic and Financial Sustainability	2010	2012	2013	2014	2015	2016
Data Reference						
GDP per capita	$1.189	$1.311	$1.376	$1.445	$1.517	$1.593
Total expenditure on health per capita	$103,0	$103,0	$103,0	$103,0	$103,0	$103,0
Population	162.287	169.766	173.659	177.640	181.713	185.879
GDP ($)	$192.959.066	$222.541.827	$239.026.479	$256.732.222	$275.749.508	$296.175.487
Expenditures total health (in $)	$16.715.546	$17.485.917	$17.886.834	$18.296.944	$18.716.456	$19.145.587
Total Government health expenditure (DSG $)	$9.193.550	$11.470.762	$11.733.763	$12.002.795	$12.277.995	$12.559.505
Resource Requirements for Immunization						
Routine and campaign immunization	$496.722	$757.421	$606.209	$699.969	$700.838	$723.018
Routine only	$496.722	$627.115	$606.209	$699.969	$700.838	$723.018
Per child DTC3	$93,9	$111,0	$104,9	$118,4	$115,9	$116,9
% of total health expenditure						
Resouorce Requirements for Immunization						
Routin and campaign immunization	3,0%	4,3%	3,4%	3,8%	3,7%	3,8%
Routine only	3,0%	3,6%	3,4%	3,8%	3,7%	3,8%
Financial gap						
With funding assured		2,0%	0,8%	1,0%	0,9%	0,9%
With funding assured and probable		0,0%	0,0%	0,0%	0,0%	0,0%
% of total governmnt health expenditure						
Resource Requirements for Immmunization						
Routine and campaign immunization	5,4%	6,6%	5,2%	5,8%	5,7%	5,8%
Routine only	5,4%	5,5%	5,2%	5,8%	5,7%	5,8%
Financial gap						
With funding assured		3,0%	1,2%	1,6%	1,4%	1,4%
With undinig assured and probable		0,0%	0,0%	0,0%	0,0%	0,0%
%GDP						
Resourcee Requirements for Immunization						
Routine and campaign vaccination	0,26%	0,34%	0,25%	0,27%	0,25%	0,24%
Routine only	0,26%	0,28%	0,25%	0,27%	0,25%	0,24%
Per capita						
Resource equiremenst for Immunization						
Routine and campaign vaccination	$3,06	$4,46	$3,49	$3,94	$3,86	$3,89
Routine only	$3,06	$3,69	$3,49	$3,94	$3,86	$3,89

Source: National Institute of Statistics, 2010

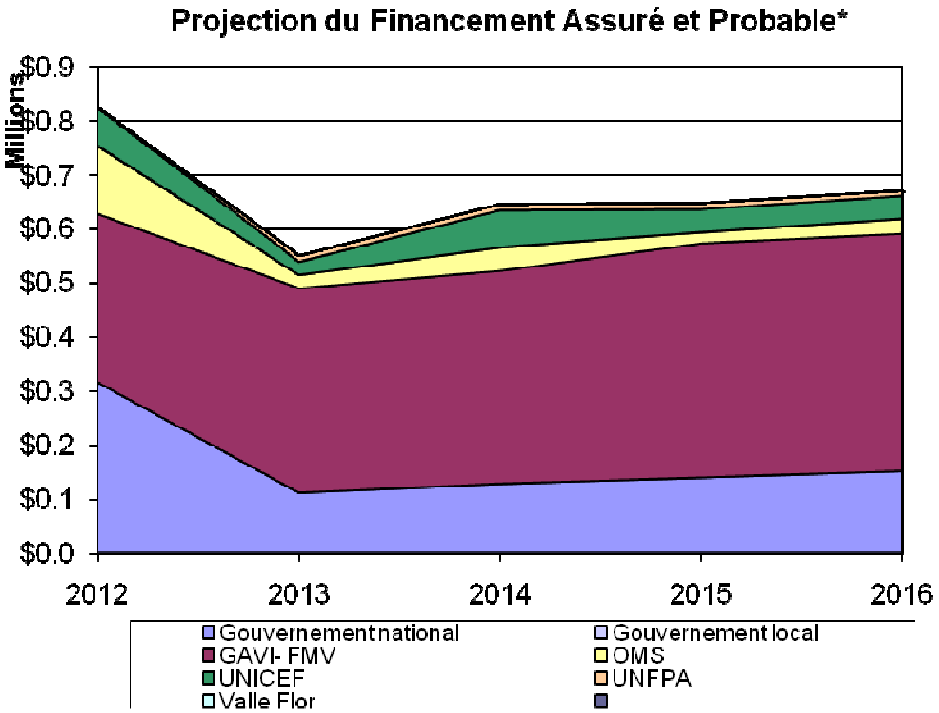


Table XXIV below provides a breakdown of costs provided and probable sources of funds and budgetary position

Table XXIV: breakdown of costs provided and probable sources of funds and budgetary position from 2012 to 2016

		Estimated annual costs in $U.S.					
	Source of funds	**Base Year 2011**	**2 012**	**2 013**	**2 014**	**2 015**	**2 016**
Recurrent costs							
1	*Government*	271.615	159.765	43.582	58.129	68.283	78.798
2	*WHO*	34.390	44.400	24.404	43.203	20.648	27.145
3	*UNICEF*	13.181	20.055	23.875	25.896	42.169	42.230
4	*GAVI*	167.536	243.298	374.314	394.107	387.057	432.603
5	*UNFPA*	10.000	11.071	11.144	11.167	11.256	10.000
6	*VALE FLORES*	-	-	-	-	-	-
Equipment costs							
1	*Government*		55.599				
2	*WHO*						
3	*UNICEF*				42.448		
4	*GAVI*		68.136	4.162		46.112	6.624
5	*UNFPA*	-	-	-	-	-	-
6	*VALE FLORES*	-	-	-	-	-	-
Campaigns							
1	*Government*						
2	*WHO*		80.036				
3	*UNICEF*		50.000				
4	*GAVI*	-	-	-	-	-	-
5	*UNFPA*	-	-	-	-	-	-
6	*VALE FLORES*	-	-	-	-	-	
TOTAL		**496.722**	**732.360**	**481.481**	**574.950**	**575.525**	**597.400**

d) Strategies for financial sustainability of the Programme

Issues of financial sustainability of the program arise primarily in terms of streamlining the management of available resources.

Indeed, vaccines are purchased for example by the Government (traditional vaccines), UNICEF (vaccines traditional) and GAVI (new and underused vaccines). This same applies to the material of the cold chain. The state uses the chain of UNICEF for its purchases and, ultimately, we often find ourselves with the same budgeted expenditure on both sides.

Government Funds are transferred to UNICEF every year without finding out if funding really is needed.

There is therefore need for the state to better coordinate its efforts with partners to better allocate resources. In order to sustain the financing of vaccine supply, the expenditure on the state budget should remain and increase annually to reflect changing demographics.

The state should ensure the construction of a cold room of large capacity in 2012 within the coming stocking of new vaccines that should enter the EPI.

The State could also raise the level of its financing to raise in excess of $ 0.20 as currently recommended by GAVI.

Table XXV: The macroeconomic and financial viability of 2012 to 2016

The outlook for macroeconomic development listed in the table below and that of oil production in future years provide opportunities for resultant funding for vaccination avoiding problems until 2016.

The key is to better organize the management and use of resources for greater efficiency.

Macroeconomic and Finacial Sustainability Indicator	2010	2012	2013	2014	2015	2016
Population	163.783	169.766	173.659	177.640	181.713	185.879
GDP curret	$173.905.378	$198.734.597	$213.455.734	$229.267.347	$246.250.182	$264.491.022
GDP per capita ($)	$1.062	$1.171	$1.229	$1.291	$1.355	$1.423
Resource Requiremens for Immunization						
Routine and campaign vaccination	$496.722	$723.031	$481.483	$574.951	$575.523	$597.400
Resource Requuirements for Immunization % of total health expenditure						
Routine and campaign vaccination	4,9%	6,7%	4,4%	5,1%	5,0%	5,0%
Financial Gap as of Total Health						
With funding secured	2,9%	0,3%	0,7%	0,5%	0,6%	2,9%
With funding secured and probable	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Financial gap as % of Total Health						
With funding secured	4,4%	0,5%	1,0%	0,8%	0,9%	4,4%
With funding secured and probably	0,0%	0,0%	0,0%	0,0%	0,0%	0,0%
Resource Requirements for Immunization by % GDP						
Routine and campaign vaccination	0,29%	0,36%	0,23%	0,25%	0,23%	0,23%
Resource requirements for Immunization per capita						
Routine and campaign vaccination	$3,03	$4,26	$2,77	$3,24	$3,17	$3,21

11. CMYP FOLLOW-UP AND EVALUATION MECHANISMS

For monitoring and evaluation of the CHP, the following instruments will be used:

11.1 In terms of monitoring

- **Health Information System**
- **Surveys**
- **Supervision and monitoring**
- **Reviews**

11.2 In terms of evaluation

Periodic evaluations will be conducted as part of the implementation of this CHP 2012-2015 both for the achievement of regular activities and for the introduction of new vaccines and immunization technologies. A mid-term review will be conducted in 2013 to assess the level of achievement of goals, improve planning and management plan for the last 2 years. Also, a final evaluation will be made one year before the expiration of the CHP to develop a future CHP for the period 2016 -2020. This latter assessment will be external.

11.3 Indicators

The principal follow-up and valuation indicators of the cMYP are:

- Rate of immunization coverage by antigen and by district; Immunization coverage rate of DTP3 by district
- % of districts with a rate of DTP3 > 90%DTP and VAR dropout rate by District;% of districts with a DTP1 – DTP3 dropout rate of < 10%Wastage rate by antigen and by district;% of districts using the "RED" approach% of immunization centers with no depletion in vaccine supply during the year;Proportion of health facilities using incinerators suitable for destroying used equipment;
- Rate of timeliness and completeness of reporting by prefecture;
- Incidence of and mortality from diseases targeted by the EPI:
  - ✓ incidence rate of severe AEFI;
  - ✓ Annualized rate of squares of non-polio AFP (> 2)
  - ✓ Percentage of stool samples taken in 14 days: (>80%)
  - ✓ The detection of AFP cases covers the entire national territory;
  - ✓ Rate of increase in the state budget to EPI;
  - ✓ incidence rate of TMN seems less than 1 case per 1000 NV;
  - ✓ Notification of at least one suspected case of yellow fever;
  - ✓ % of districts which have investigated a suspected case of measles;
  - ✓ % of all districts which have investigated outbreaks of measles;

- Rate of execution of state budget allocated to the EPI;

- Level of participation of members of community participation in EPI activities;
- Number and proportion of follow-up meetings held;
- Amount and percentage of state budget allocated to health and EPI;
- Respective contribution of the different partners (government, communities and external aid) to the EPI budget (in%)

12. PLAN OF ACTION 2012

12. 1 Objectives

12.1.1 General Objective: Contribute to reducing morbidity and mortality related to diseases preventable by vaccination.

12.1.2 Specific objectives

1) Achieve a rate of immunization coverage:

- DTP3-HepB-Hib of 98% nationally
- OPV3 of 98% nationally
- BCG of 99% nationally
- VAR of 95% nationally
- VAA of 95% nationally
- TT2 of + 95% nationally
- PCV-13: 95%

2) Reduce the rate of loss of antigens at the following **rates**

- BCG to 45%
- DTC-HepB/Hib kept below 5%
- OPV to 10%
- 30% VAR
- VAA to 15%
- VAT at 10%
- PCV-13 to 5%

3) Introduction in 2012 in 100% of Districts of pneumococcal vaccine (PCV-13) in the routine EPI

4) Increase the storage capacity at the central level

o provide the central level with a cold room of 10 m 3

4) To eradicate polio, eliminate MNT, YF and measles:

- No case of isolated PVS with a non-polio AFP rate> 2
- Maintain an effective rate of TMN <1 case per 1000 NV
- Maintain key performance indicators for monitoring measles and yellow fever in all regions (80% of districts with at least one suspected case sampled and investigative annualized rate of 2 per 100,000 inhabitants);

5) Ensure the safety of vaccination:

- Ensuring the use of AD syringes for immunization in 100% of EPI centers.
- Notifying cases of AEFI

6) Increase the financial, material and human resources for the EPI and improve their management:

- Allocating 10% of actual financial resources of the state for vaccination;
- Endowing 25% of EPI services of qualified personnel;
- providing the central level and the health districts suitable rolling means;
- Ensuring the maintenance of equipment at 60%.

12.2 Strategies

To achieve the above, the following strategies will be developed:

1. The implementation of the RED strategy at national level;
2. Strengthening the logistics system
3. Strengthening the management system for vaccines
4. Strengthening integrated disease surveillance;
5. The introduction of new vaccines;
6. Strengthening Communication for EPI
7. Capacity building

12.3 Schedule of activities

Calendar of Activities and Budget of the Action Plan 2008

MAIN ACTIVITIES	J	F	M	A	M	J	J	A	-{} -S	O	N°	D	Responsables	BudgetUSD
Service delivery														
Organize EPI micro-planning workshops	x											x	Directorate of Health Care	7 000
Expand outreach and mobil teams	x	x	x	x	x	x	x	x	x	x	x	x		2 000
Perform supervisory visits in every six months for the central level and quarterly at the District level			x			x			x			x	Directorate of Health Care	2 800
Bring bck the quarterly meetings of monitoring and evaluation of EPI activities			x			x			x			x		1 500
Revise/update the monitoring tools											x	x	Directorate of Health Care	800
Strengthening of epidemilogical surveillance														
Develop an Active Surveillance plan	x												Directorate of Health Care	2 500
Produce quarterly epidemiiological bulletins to ensure feedback at all levels			x			x			x			x		1 000
Revise/update the monitoring tools												x	Directorate of Health Care	800
Carry out 7 training sessions for rainers on surveillnce of AFP cases for communities												x		3 500
Organize a response in case of discovery of wild poliovirus and yellow fever											x		Directorate of Health Care	35 000
Strengthenig the management system for vacines														
Use vials of small doses	x	x	x	x	x	x	x	x	x	x	x	x	Directorate of Health Care	
Spread the vial policy	x	x	x	x	x	x	x	x	x	x	x	x		
Adapt the tolos of management with respect to new vaccines											x		Directorate of Health Care	1 500

Strengthening the logistics system														
Order a 10 m3 cold room for the central level				x									Directorate of Health Care	
Capacity building														
Organize training of health staff on the introduction of new vaccines to EPI by level											x	x	Directorate of Health Care	10 000
Strengthening mechanisms for ongoing funding of the EPI														
Strengthen advocacy for the availability of resources in the Budget of the State	x	x	x	x	x	x	x	x	x	x	x	x	Directorate of Health Care	2 000
Strengthen advocacy for increased national Budget allocated to health	x	x	x	x	x	x	x	x	x	x	x	x		

For the multiannual Complete Plan for the Expanded Programme on Immunization 2012 - 2015, activities related to child survival in routine immunization will be integrated to maximize the chance of reducing mortality of children and women.

To this end, emphasis will be placed on the coordination of interventions that will be part of packages of services to integrate. Resources will be pooled to achieve economies of scale and give a chance to all target groups likely to be affected to any geographical part of the Democratic Republic of SAO TOME AND PRINCIPE.

CONCLUSION

This Multi-Year Complete Plan (CHP) from 2012 to 2015 is an instrument of implementation of national health policy whose aim is to improve the health of the Democratic Republic of SAO TOME AND PRINCIPE. It will be implemented through five year plans and annual action plans in order to adapt to the changing political and socio-economic development of the country.

Political commitment at the highest state level, the development of a new and strong partnership, multisectoral collaboration, improved funding of the health sector, collaboration between the public and the private sector, the effective involvement of civil society including the community some of the determining factors for the implementation of the Plan.

In order to do so, the government of the Democratic Republic of Sao Tome and Principe, aware of the gravity of the health situation of its people, resolves to allocate, insofar as it is capable, the necessary resources and to take all measures expedient to enacting the plan and ensure the financial sustainability of the EVP. In the current context of economic and financial difficulties, the Government relies on national and international solidarity for the mobilization of additional resources required to achieve the goals set and therefore those for the Millennium Development Goals.