MINISTRY OF PUBLIC HEALTH AND POPULATION
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OFFICE DIRECTORATE
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GENERAL DIRECTORATE OF PUBLIC HEALTH
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EXPANDED PROGRAM ON IMMUNIZATION DIRECTORATE
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CENTRAL AFRICAN REPUBLIC
UNITY – DIGNITY - WORK
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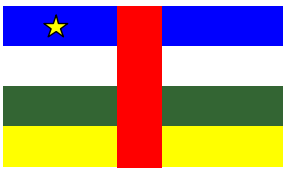
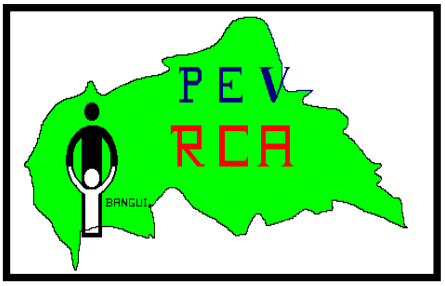


COMPLETE MULTI-ANNUAL PLAN OF THE EXPANDED PROGRAM ON IMMUNIZATION (PEV) IN THE CENTRAL AFRICAN REPUBLIC
2007 - 2011



Bangui, April 2007

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PREFACE

Central African Republic adopted the National Health Care Development Plan II (PNDS II) in 2006. This second plan, consisting of priority heath care programs, takes into account the Millennium Development Objectives (OMD). 2015 is the target year to measure the progress achieved.

The Expanded Program on Immunization is a part of PNDS priority programs. Its contribution to reduction of mortality of infants, children and mothers has been widely recognized upon completion of the PEV Accelerated Development Operation Plan (PODAPEV). Central African Republic was awarded the price of the International Health Care Council (NCIH) in recognition of the remarkable progress achieved in terms of children's survival in Africa.

These gains suffered a setback during the 1997-2003 period as a result of insufficient performance of the health care system, and especially in view of unfavorable sociopolitical and economic environment. This resulted in very high mortality rates among children below the age of 5 (220 per 1,000) and pregnant women (1,355 per 100,000 live births) according to the indications of the General Population and Housing Census (RGPH) of 2003.

Central African government, aware of the impact of the Expanded Program on Immunization on children's survival and development, adopted the multi-annual PEV plan for 2003-2007. The first four years of its implementation permitted to improve the immunization rate. However, these rates still remain too low because of the reasons indicated above.

Central African people and their government reaffirm the importance they attribute to the Expanded Program on Immunization for children's survival and development. This impact of PEV would not be possible without effective integration of PEV with other high-priority programs aimed against childhood diseases (malnutrition in terms of proteins and energy intake or food insufficiency, malaria, diarrheic diseases, supply of drinking water and basic sanitation, etc.) and new strategies (such as Full Development of Young Children, Reduction of Maternal and Neonatal Mortality, etc.), so that it becomes effective within a performing health care system working in partnership with the communities.

In the context of continuing the progress accomplished in the area of children's survival and development during the 90s and started during the implementation period of the 2003-2007 Multi-Annual Plan, following long-term military, political and social crises, the Ministry of Public Health and Population, in cooperation with the appropriate ministerial departments and development partners prepared the Complete Multi-Annual Plan of the Expanded Program on Immunization (PPAC/PEV) for 2007-2011. It is the first phase of the plan running up to 2015, which complies with the international vision of immunization strategies.

The Government adopted the PPAC/PEV, following its validation by the Inter-Agency Committee of the Expanded Program on Immunization, on April 18, 2007, as a tool for programming, implementation, follow-up and evaluation of immunization activities, including other essential services in a performing Central African health care system, in order to ensure good health of Central African children and women for the period 2007-2011.

Je saisis cette occasion pour exprimer au nom du gouvernement, mes sincères remerciements aux cadres du Ministère des Finances et du Budget, du Ministère de l'Economie, du Plan et de la Coopération Internationale, du Ministère de la Santé Publique et de la Population, ainsi qu'à ceux des partenaires au développement, notamment l'OMS et l'UNICEF qui ont apporté leur concours technique à l'élaboration de ce PPAC/PEV, document- cadre national de référence pour les actions d'immunisation et de santé en faveur des enfants et des femmes pour la période 2007-2011.

Mes remerciements vont également à l'endroit de l'Alliance Mondiale pour les Vaccins et la Vaccination (GAVI) pour son appui financier qui a permis de mener à terme le processus d'élaboration de ce PPAC/PEV.

Enfin, j'exprime toute la gratitude du Gouvernement au GAVI, à l'UNICEF, à l'OMS, Rotary International, à l'Union Européenne et aux autres partenaires au développement pour leur contribution financière et technique à l'amélioration des taux de couverture vaccinale lors du premier plan pluriannuel.

FAIT A BANGUI, LE 18 avril 2007

LE MINISTRE DE LA SANTE PUBLIQUE
ET DE LA POPULATION

MINISTERE DE LA SANTE DE LA POPULATION
LE MINISTRE
REPUBLIQUE CENTRAFRICAINE

Docteur Bernard LALA

I am taking this opportunity to express my sincere thanks on behalf of the government to the staff of the Ministry of Finances and Budget, Ministry of Economy, Planning and International Cooperation, Ministry of Public Health and Population, as well the development partners, and namely WHO and UNICEF, for providing technical support for preparation of this PPAC/PEV, the main national reference document for immunization and health care actions for children and women for the period 2007-2011.

I would also like to thank the Global Alliance for Vaccines and Immunization (GAVI) for its financial support, which permitted to complete the PPAC/PEV preparation process.

Finally, I express the Government's gratitude to GAVI, UNICEF, WHO, Rotary International, European Union and other development partners for their financial and technical contribution to improvement of immunization rate for the first multi-annual plan.

Bangui, April 18, 2007
Minister of Public Health and Population
Dr. Bernard LALA
/signature and stamp/

LIST OF ACRONYMS AND ABBREVIATIONS

- ACD : Atteindre Chaque District – Reach Each District
- ARN : Autorités Nationales de Réglementation – National Regulatory Authorities
- AVS : Activités Supplémentaires de Vaccination – Additional Immunization Activities
- BCG : Bacille de CALMETT et GUERIN; Calmette-Guerin bacillus
- BCR : Bureau Central de Recensement; Cental Census Office
- BM : Banque Mondiale; World Bank
- CCC : Communication pour un Changement de Comportement; Communication for Change of Behavior
- CCIA : Comité de Coordination Inter-Agences; Inter-Agency Coordination Committee
- CC : Chaîne de Froid; Cold Chain
- CDMT : Cadre des Dépenses à Moyen Terme; Medium-Term Expense Framework
- CICR : Comité International de la Croix Rouge; International Red Cross Committee
- CNVR : Campagne Nationale de Vaccination contre la Rougeole; National Campaign of Measles Immunization
- CPN : Consultation Prénatale; Prenatal Consultation
- COGES : Comité de Gestion ou Conseil de Gestion; Management Committee or Management Council
- COOPI : Coopération Italienne; Italian Cooperation
- CS : Centre de Santé; Health Care Center
- CSLP : Cadre Stratégique de Lutte contre la Pauvreté; Strategic Framework of Fight Against Poverty
- CTAPEV : Comité Technique d'Appui au Programme Elargi de Vaccination; Technical Committee Supporting the Expanded Program on Immunization
- DCS : Direction de Communication en matière de Santé; Health Care Communication Directorate
- DMPGE : Direction de la Médecine Préventive et de lutte contre les Grandes Endémies; Preventive Medicine and Major Endemics Fight Directorate
- DMPM : Direction de la Médecine Préventive et de lutte contre la Maladie; Preventive Medicine and Disease Fight Directorate
- DGSP : Direction Générale de la Santé Publique; General Public Health Directorate
- DPEV : Direction du Programme Elargi de Vaccination; Expanded Program on Immunization Directorate
- DTC : Diphtérie, Tétanos et Coqueluche; Diphtheria, Tetanus and Pertussis

- EDS : Enquête Démographique et de Santé; Demographic and Health Investigation
- FFOM : Forces, Faiblesses, Opportunités et Menaces; Strengths, Weaknesses, Opportunities and Threats
- FMI : Fonds Monétaire International; International Monetary Fund
- FOMUC : Force Multinationale de la CEMAC; CEMAC Multinational Force
- FOSA : Formation Sanitaire; Sanitary Training
- GAVI : Global Alliance for Vaccines & Immunization (Alliance Mondiale pour la Vaccination et les Vaccins);
- GIVS : Global Immunisation Vision and Strategies;
- IDH : Indice de Développement Humain; Human Development Index
- IEC : Information, Education et Communication; Information, Education and Communication
- IRA : Infections Respiratoires Aiguës; Acute Respiratory Infections
- JNV : Journées Nationales de Vaccination; National Immunization Days
- JNSE : Journées Nationales de Survie de l'Enfant; National Children's Survival Days
- JLV : Journées Locales de Vaccination;Local Immunization Days
- LMD : Lutte contre les Maladies Diarrhéiques;Fight Against Diarrheic Diseases
- MEG : Médicaments Essentiels Génériques; Essential Generic Medications
- MFB : Ministère des Finances et du Budget; Ministry of Finances and Budget
- MICS : Multiple Indicators Cluster Survey (Enquête à Indicateurs Multiples);
- MII : Moustiquaires Imprégnées d'Insecticides; Mosquito Nets Impregnated with Insecticide
- MEPCI : Ministère de l'Economie, du Plan et de la Coopération Internationale; Ministry of Economy, Planning and International Cooperation
- MSF : Médecins Sans Frontières;
- MSPAS : Ministère de la Santé Publique et des Affaires Sociales; Ministry of Public Health and Social Affairs
- MSPP : Ministère de la Santé Publique et de la Population ; Ministry of Public Health and Population
- IST : Infections Sexuellement Transmissibles; Sexually Transmitted Diseases
- OCEAC : Organisation de Coordination de lutte contre les Grandes Endémies en Afrique Centrale; Organization Coordinating the Fight Against Major Endemics in Central Africa
- OMD : Objectifs du Millénaire pour le Développement; Millennium Development Objectives
- WHO : Organisation Mondiale de la Santé; World Health Organization

- ONG : Organisation Non Gouvernementale; Non-Governmental Organization
- PEV : Programme Elargi de Vaccination; Expanded Program on Immunization
- PIB : Produit Intérieur Brut; Gross Domestic Product
- PNDS : Plan National de Développement Sanitaire; National Health Care Development Plan
- PNUD : Programme des Nations Unies pour le Développement; United Nations Development Plan
- PoA : Plan of Action
- PPAC : Plan Pluriannuel Complet; Complete Multi-Annual Plan
- PPTE : Pays Pauvres Très Endettés: Very Indebted Poor Countries
- PVS : Poliovirus Sauvage; Wild Poliovirus
- PS : Poste de Santé; Health Care Station
- RCA : République Centrafricaine; Central African Republic
- RGPH : Recensement Général de la Population et de l'Habitation; General Population and Housing Censes
- RS : Région Sanitaire; Sanitary Region
- SGESU : Service de Gestion des Epidémies et de la Situation d'Urgence; Epidemia and Emergency Situation Management Service
- AIDS : Syndrome d'Immunodéficience Acquise; Acquired Immunodeficiency Syndrome
- SMED : Service de Maintenance des Equipements Biomédicaux; Biomedical Equipment Maintenance Service
- SMI : Santé maternelle et Infantile; Maternal and Infant Health
- SNIS : Système National d'Information Sanitaire; National Health Care Information System
- SPEV : Service du Programme Elargi de Vaccination; Expanded Program on Immunization Service
- SR : Santé de la Reproduction; Reproduction Health
- SSP : Soins de Santé Primaires; Basic Health Care
- UCM : Unité de Cession du Médicament; Medication Transfer Unit
- EU : Union Européenne; European Union
- UNICEF : Fonds des Nations Unies pour l'Enfance; United Nations Children's Fund
- USAID : United States Agency for International Development
- VAA : Vaccin Anti-Amaril; Vaccine Against Yellow Fever
- VAR : Vaccin Anti-Rougeoleux; Vaccine Against Measles
- VAT : Vaccin Antitétanique; Vaccine Against Tetanus
- HIV : Virus d'Immunodéficience Humaine; Human Immunodeficiency Virus

- VPO : Oral Polio Vaccine;

INTRODUCTION

Like other countries in the world, the Central African Republic adopted the Expanded Program on Immunization (PEV) as one of its priority health care programs. This was the context of PEV introduction in Central Africa in 1979. Vaccination rates were low and did not permit the program to effectively contribute to reduction of children's mortality rates, which were estimated at 212 per 1,000 for infant-child mortality and 132 per 1,000 for infant mortality (RGPH 1988).

In this context the Government developed, adopted and implemented the Accelerated Development Operation Plan of PEV (PODAPEV) 1986 –1990 (DMPGE/MSPAS, May 1986), with support of its development partners. It permitted to immunize slightly more than 75% of children below the age of 1 against PEV target diseases (Immunization Rate Investigation Report, MSPP, UNICEF, USAID, OMS and OCEAC, Bangui, 1991). Together with the vaccination rate increase, we noted a drop in mortality of children below the age of 5 years (212 ‰ according to RGPH 1988 versus 157 ‰ in 1995 according to EDS 1994/95). As a result of this achievement, RCA was awarded a gold medal by UNICEF, at the international children's summit held in New York in 1987.

Unfortunately, starting from 1996 the vaccination rates gradually lowered to reach less than 50% for all antigens in 2001. This situation led the Government and its partners (WHO and UNICEF) to proceed with an external review of PEV in 2002. Its results permitted RCA to develop a 2003-2007 multi-annual plan (MSPP/DMPM/SPEV, 2003), and at the same time benefit from the support of the Global Alliance for Vaccines and Immunization (GAVI) starting from 2003

The implementation of the 2003-2007 PEV Multi-Annual Plan with the constant support of UNICEF, WHO and GAVI, and with occasional support of other partners (CICR, UE/COOPI, MSF, etc.) permitted to improve the immunization rate. However, they still remain insufficient to contribute to reversing the mortality trend of children below the age of 5, which continues to increase. As a mater of fact, the child mortality rate increased from 157 ‰ in 1995 to 194 ‰ in 2000 (MICS 2000) and to 220 ‰ in 2003 (2003 RGPH report published in 2006). Maternal mortality rate is also increasing (1,355 for 100,000 live births in 2003 according to RGPH versus 948 for 100,000 LB in 1995 according to EDS 1994/95 and 688 for 100,000 NV in 1988 according to RGPH).

This poor performance of PEV can be explained by multiple factors, including: insufficiency and unwisely use of transportation vehicles for transport of children, modern, mobile equipment for supervision and monitoring of activities at all levels, old infrastructure, quantitative insufficiency of qualified staff, poor program management capacity at all levels of the health care system, low morale of the staff in view of irregular payment of salaries, limited financial capacity of the State, which cannot efficiently support the PEV investment, a limited number of partners supporting PEV on a regular basis, persisting insecurity in view of the presence of armed gangs cutting off the roads in the northern part of the country.

In addition to the variety of problems listed above, the Central African PEV faces a number of equally important and urgent challenges: increasing and maintaining high levels of routine immunization, eradication of poliomyelitis, control of measles and yellow fever, elimination of maternal and neonatal tetanus, injection safety, introduction of new vaccines and improving the health care system.

The Central African Government, aware of the impact of the Expanded Program on Immunization on reduction of mortality among children below the age of 5, committed to reaching the Millennium Development Objectives (OMD) in order to reduce poverty and promote economic growth and social development, adopted the 2007-2011 Complete Multi-Annual Plan of PEV (one of the priority plans of the 2006-2015 National Health Care Development Plan), in order to mobilize resources for implementation of immunization activities and other services essential for survival and development of children.

Validation of 2007-2011 PPAC, before the Central African Government submits it to the development partners, followed a four-stage preparation process:

1. The initial document has been prepared at a meeting of the staff of Public Health and Population Ministry departments from all levels of the health care pyramid, ministries of Finances and Budget, Planning Economy and International Cooperation, and representatives of development partners, and namely WHO and UNICEF;
2. The initial draft has been finalized by the PEV Technical Support Committee (CTAPEV), a technical body of the Inter-Agency Coordination Committee (CCIA) of PEV, with a strong involvement of the staff of ministries of Finances and Budget, Planning Economy and International Cooperation;
3. The 2007 – 2011 PPAC, finalized by CTAPEV, has been submitted to the meeting of the Inter-Agency Coordination Committee (CCIA) of PEV, which validated it;
4. The document validated by CCIA has been approved jointly by the Public Health and Population Ministry and the Ministry of Finances and Budget before its submission.

The present complete CAR 2007 – 2011 multi-annual PEV plan is structured as follows:

1. General remarks;
2. Critical analysis of the situation,
3. National priorities;
4. PPAC vision and objectives;
5. Strategies and activities adopted according to the objectives;
6. Schedule of activities;
7. Analysis of costs and program financing;
8. PPAC implementation organization;
9. 2007 action plan;
10. Integration and merging of activities.

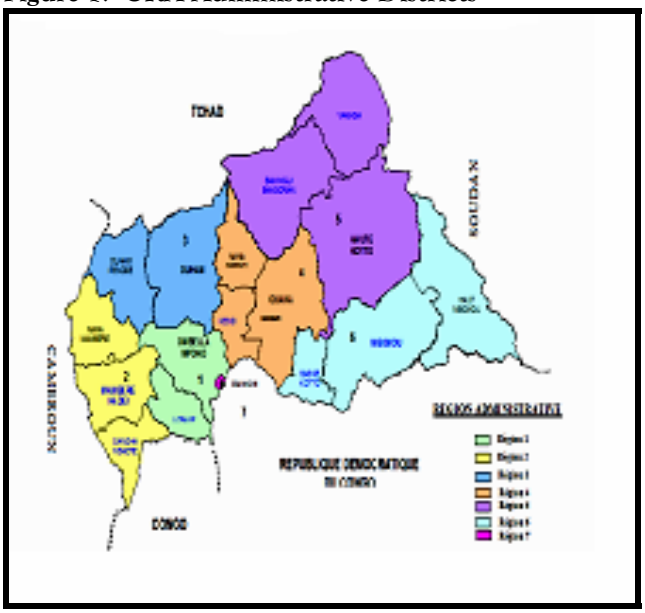
The PPAC includes also bibliography references and appendices..

1. GENERAL REMARKS

1.1. External Environment of the Health Care System

1.1.1. Geographic Overview

Figure 1: CRA Administrative Districts



Central African Republic, located at the heart of the African continent, has a surface of 623,000 km². It is bounded on east by Sudan, on west by Cameroon, on north by Chad, and on South by Democratic Republic of Congo and the Republic of Congo.

The climate is equatorial, characterized by two seasons: a rainy season from May to October, and a dry season from November to May. During the rainy season, the roads between the capital, Bangui and north-eastern districts of Vakaga and Bamingui-Bangoran, located 1,250 km and 675 km from it, are cut off, which makes certain interventions difficult.

CAR internal road network consists mostly of rural roads, practically unusable in the rainy season. Therefore, some locations are inaccessible. Air traffic is not developed either since the country has less than 20 unpaved airports. Some of them are practically unusable during the rainy season because of flooding, while other are not maintained properly.

CAR entrapment represents one of its most serious handicaps preventing development. The country has no access to sea and uses the Douala port in Cameroon (1,470 km by road) and Pointe Noire port in the Republic of Congo (1,710 km river connection) for import and export. However, there are some navigable water courses that permit to reach locations inaccessible by road.

1.1.2. Demographic Data

In demographic terms the Central African Population was estimated at 4,132,989 inhabitants in 2006 (RGPH 2003 projection after correction), with a natural birth rate of 2,5% and a mean population density of 6.6 inhabitants per km², varying from 10,041.38 inhabitants per km2 in Bangui to 0,79 inhabitants per km2 in Bamingui-Bangoran (See the map in Appendix 1). The central, eastern and south-eastern regions occupy approximately one half of the national territory (53%) but are inhabited by only 20% of the total population.

The population is mostly rural, and consist mostly of young people (approximately 49.4% below the age of 18), with a light predominance of women. The main demographic indicators obtained from the 2003 General Population and Housing Census (RGPH) are summarized in Table 1 below.

Table no. 1: The Main Updated Socio-Demographic Indicators (Source: RGPH 2003)

Indicators	**2003 Levels**
Total population	3,895,139 inhabitants

Inter-census increase rate	2,5%
Urban population	38 % of the total population
Rural population	62 % of the total population
Children below the age of 1	3,5 % of the total population
Surviving infants	3,04% of the total population
Children from 6 to 11 months	1,75% of the total population
Children from 12 to 59 months	13,8% of the total population
Children from 6 to 59 months	15,55% of the total population
Children below the age of 5	17,3 % of the total population
Children below the age of 15	40,7 % of the total population
Women in procreation age (15-49 years)	24,5% of the total population
Pregnant women	4% of the total population
Summary fertility index	CRA: 5.1 children per woman; 4,7 children per woman in urban areas and 5,4 children per woman in rural areas
Gross birth rate	CRA: 39,1 per 1000 with 38,2 for 1,000 in urban areas and: 39,4 for 1,000 in rural areas.
Infant mortality rate	CRA: 132 per 1000 with 116 for 1,000 in urban areas and 141 for 1,000 in rural areas
Children mortality rate	CRA: 220 per 1000 with 188 for 1,000 in urban areas and 238 for 1000 in rural areas
Maternal mortality rate	1.355 for 100,000 live births
Analphabetism rate	57.3% - 46.2 % among men and 68 % among women; 36.2% in urban areas and 70.9% in rural areas.

Source: BCR

With an inter-census rate of 2.5% between 1988 RGPH and 2003 RGPH, the total numbers of CAR population and those for the target groups of PEV and other integrated immunization services will be increasing as shown in the following table 2.

Table no. 2: Projection of the numbers of target populations for PEV and other immunization-related services (2003 RGPH)

Target groups	2006	2007	2008	2009	2010	2011
Total population	4132989	4216666	4302359	4390008	4479442	4570799
Women in procreation age	1012582	1033083	1054078	1075552	1097463	1119846
Pregnant women	165320	168667	172094	175600	179178	182832
Children between 0 and 18 years	2025165	2066166	2108156	2151104	2194927	2239692
Children between 0 and 15 years	1682127	1716183	1751060	1786733	1823133	1860315
Children between 0 and 59 years	715007	729483	744308	759471	774943	790748
Children between 6 and 59 months	642680	655692	669017	682646	696553	710759
Children below 1 years	144655	147582	150583	153650	156780	159978
Surviving infants	125643	128187	130792	133456	136175	138952

Source: BCR

1.1.3. An Overview of the Political, Institutional and Administrative Organization

On the administrative level, the Central African Republic is divided in seven (7) regions, 16 prefectures, 62 sub-prefectures, 177 communes (including 8 districts of Bangui, the seventh administrative region), 8,294 villages and 1,422 quarters.

On the political and institutional level, after many years of military, political and social crises, the Central African Republic resumes democratic approach with organization of the constitutional referendum in 2004 and legislative and presidential elections in 2005.

Gradual creation of political environment favorable for development raises real hopes among the population, which must be satisfied through proper governance and culture of peace. However, wars in neighboring countries (Sudan and Chad) with repercussions on CRA, as well as persisting insecurity caused by the presence of armed gangs cutting off roads, especially in the central and northern parts of the country, constitute threats for implementation of health care activities. However, the Government, with the support of France and FOMUC is currently conducting operations to make the country safer.

The right to health is recognized by the country's constitution.

Dynamic civil society plays a role promoting development and at the same time regulating the country's democratization process. It is involved in various areas, such as human rights, consumer's rights, basic development activities, specific activities addressed to women, and sector activities. In the health care sector, NGOs and private health care entities are involved in the immunization process.

1.1.4. An Overview of Economic Data

On economic level, the Central African Republic has an enormous potential (agriculture, breeding, wood and mining resources, etc.). Despite its rich soils and underground resources, CAR remains among the world's poorest countries. The Strategic Framework of Fight Against Poverty (CSLP) which is being completed gives an overview of economic and financial problems that CAR is facing.

Despite numerous reorganization plans, reforms and economic recovery policies undertaken by various governments, Central African economy still remains a traditional subsistence economy with very poor performance. Since the country reached independence, the evolution of economic activity is dictated by the primary sector, which alone contributes to more than half of GDP (55%), followed by the tertiary (32% of GDP) and secondary (13%) sectors. During the last ten years, the economic activity declined by 2.7% in view of destruction, pillage and paralysis of the production system caused by consecutive social and political crises. The real Gross Domestic Product growth rate remain very low, at 0.4%, for the last three (3) decades, which is very low compared to the demographic growth rate estimated at 2.5% per year.

In terms of public finances, we noted a slowdown of external help resulting in lower public aid per inhabitant, which dropped from $86 US in 1990 to $15.7 US in 2002 and $10 US in 2003. This situation resulted in an excessive debt of the Central African Republic (internal debts including salary backlog) in the last then years (DRSP).

One of the main causes of poor performance of economic activities if the absence of a stable macroeconomic picture sustained by coherent economic policies in order to ensure sustainable growth and favor redistribution towards the poor. However, the Government with help of its development partners is adopting measures to improve the macroeconomic and financial situation and finalize the Strategic Framework of Fight Against Poverty (CSLP), including Medium-Term Expense Framework (CDMT), which is being finalized. For the health care sector, the Strategic Framework of Fight Against Poverty includes: upgrading and better equipment of health care infrastructure, providing vaccines, medications, biomedical and surgical consumables and development of health care human resources.

The framework includes also strengthening of First Aid activities, HIV/AIDS prevention and care for people living with HIV/AIDS and OEV, as well as the fight against endemic diseases. Acceptance of this CSLP by multilateral institutions, associated with the improvement of economic and financial performance, will permit CRA, presently in post-conflict situation, to gain access to the PPTE initiative in the near future.

1.1.5. Overview of Human development in CAR

The level of human development in the Central African Republic started to lower since the nineties. During these 10 years, the Human Development Index (HDI) dropped by many positions, establishing the country among ten of the poorest countries of the world. CAR dropped from 154 out of 174 countries in 1990 to 165 in 1995, then to 171 out of 177 in 2005 and 172 out of 177 in 2006. This decline can be explained by serious military and political crises affecting the country in the whole period of 1996 to 2003, resulting in destruction of economic infrastructure.

The combined schooling rate dropped from 37% in 1994 to 31% in 2002, which is a lower level than in 1960, the year when the country gained independence. This situation is the result of many difficult years the country experienced. The gross primary schooling rate is at 68.7%, and the secondary rate at 21%.

In terms of revenue, expressed by GDP per capita, it decreased from $480 in 1977 to $ 331 US in 2004 (PNDS II).

1.2. Internal Environment of the Health Care System and PEV

1.2.1. Overview of the Population's State of Health

The examination of CRA health indicator tendencies in the recent years shows that the health care situation of populations is precarious and troubling both in the rural and in the urban areas.

As a matter of fact, the general mortality rate increased from 17‰ in 1988 to 20.18 ‰ in 2003 (PNDS 2006-2015). In 15 years, the population's life expectancy at birth was reduced by more than 6 years, dropping from 49 years in 1998 to 43 years in 2003. The mortality rate of children below the age of 5, following a drop of 212‰ in 1988 (RGPH) to 157‰ in 1995 (EDS 1994/95), is constantly increasing (194‰ in 2000 according to MICS II and 220‰ in 2003 according to the RGPH report, published in June 2006).

Moreover, the central African Republic remains the country with the highest rate of women's death at birth. For 100,000 live births, 1,355 maternal deaths were reported in 2003 (RGPH) versus 683 in 1988 (RGPH).

Children and women are the most affected. The main causes of morbidity and mortality are represented by:

- Malaria

On the national level, malaria affects 37.66% of the population. Among them, 32% are children below the age of 5 with the hospital death rate of 0.5%[1]. The country has recently adopted a new approach to the fight against malaria and has been benefiting from the support of the World Fund for the Fight Against HIV, Tuberculosis and Malaria since 2005.

- ACUTE RESPIRATORY INFECTIONS (IRA)

With the prevalence rate of 15.4% according to the EDS-RCA 1994-95 results, IRA were the main reason for deaths of children below the age of 5.
This prevalence rate dropped on the national level to 10.3% (MICS 2000) and then increased to 17.45% in 2003 (SNIS).

[1] **SNIS 94-98**

- Diarrheic Diseases

On the national level, the prevalence rate of diarrheic diseases among children below the age of 5 was going up and down between 1996 (26.5% according to MICS I) and 2000 (25.7 % according to MICS II).

- Expanded Program on Immunization (PEV) Target Diseases

Le The national immunization program, very often responding to epidemics, is less performing in the management of routine PEV. This aspect will be discussed in the analysis of the situation.

- Malnutrition

According to the MICS 2000 survey, the global protein – energetic malnutrition situation (severe and moderate) among children below the age of 5 remains a serious problem. The prevalence rates of weight insufficiency and growth delay are, respectively, 24.2% and 38.5% .
Almost 9% of children suffer from acute malnutrition, 13% are born with a weight below 2500g; 68.2% of children between 6 and 36 months are affected by Vitamin A deficiency. 84% of children in the same age group are anemic. 55.5% of pregnant women suffer from anemia. Endemic goiter, caused by iodine deficiency, remains prevalent (more than 61% in 1991).

- HIV/ AIDS

In CAR, HIV/ AIDS is about to become the main reason for morbidity and mortality. As a matter of fact, the general HIV prevalence is 6.2%. Women are affected twice as much (7.8%) as men (4.3%) in the age group between 15 and 49 years. The epidemics is mostly concentrated among adults. This prevalence is two times higher in the urban areas than in the rural areas. There are strong geographic differences, varying between 13.6% and 3.1% (MICS2006, HIV serology part).

According to CAR ONUSIDA, parent-infant transmission of HIV is estimated at 35% in 2003.

- Reproductive Health Problems Among Pregnant Women

They are related to a high maternal mortality (1355 for 100,000 live births), caused by pregnancy, miscarriage and birth complications. The Ministry of Public Health and Population prepared an action plan for acceleration of reduction of maternal and neonatal mortality. The interventions in question can be performed as a support of GAVI 2 strengthening the health care system.

- Other Endemics

Some of them occur in known and limited areas (Human African Trypanosomiasis (THA) and Onchocercosis). Other affect the general Central African population (leprosy, intestinal parasitic diseases, intestinal and urinary Bilharziosis, hepatitis with predominance of type B viral hepatitis).

1.2.2. The Health Care System and Its Main Problems

1.2.2.1. Healthcare Policy

The Act 89.003 of March 29, 1989, establishes the general health care principles in CAR. In the perspective of adaptation of this act to the current situation, a new health care policy, clearly defined, validate don the technical level in 2001 and reviewed in 2004, is being adopted by the Government.

This health care policy is based on basic health care (SSP). It is based on principles of equity, accessibility, equality and social justice.

1.2.2.2. Organization and Functioning of the Health Care System

In application of the three-phase scenario for health care development in the African region of WHO, adopted by the 35th session of the Regional Committee, which met in LUSAKA in 1985, the national

health care system of the Central African Republic is organized as a three-level pyramid: central, intermediate and peripheral.

These three levels are clearly defined in the Decree number 05.121 of June 06, 2005, describing the organization and functioning of the Ministry of Public Health and Population and establishing the Minister's responsibilities.

The central level is responsible for design, preparation and application of the Government's policy in the domain of public health and population. It includes coordination, control and evaluation of services responsible for the implementation of this policy; definition of health care strategies; ensuring of management of all human, financial and technical resources entrusted for execution of this mandate; proposing and executing any measures for fight against health care problems among the population; preparation of national plans of health care sector development; monitoring mobilization of resources necessary for the management of the public health and population; promotion of private health care structures and controlling their activities, cooperation with national and international health care sector bodies; participation in negotiations with bilateral and multilateral organizations; examination and making suggestions, regarding treaties, conventions and international agreements regarding the health care issues.

The intermediate level includes seven health care regions (RS), corresponding to the administrative regions of the country. Each RS consists of two to three prefectures, except for RS number 7 (Bangui), which has 8 districts, similar to health care prefectures. The mission of this level is to provide an interface between the central authorities and the peripheral level. It is responsible for application of health care policy directives, received from the central level, coordination and control of all health care activities of the public and private sectors in its jurisdiction zone, exercising integrated activities on the regional level, providing technical support to the prefectures for the implementation of the Primary Health care.

The peripheral level consists of 16 prefectures and 8 health care districts of Bangui, which correspond to the administrative organization of the country. The prefectures and the health care districts of Bangui are responsible for application of directives, received from the region; coordination and control of all activities of the prefecture and districts; providing assistance to the health care training required for execution of integrated activities. This level constitutes the operational entity of the system.

1.2.2.3. National Healthcare Development Plan and Complete Multi-Annual Plan

For the period 2006 – 2015, CAR prepared a National healthcare development Plan. PEV is one of its priority programs.

To address the major problems and challenges, the following four strategic axes have been defined:

- Strengthening of the institutional framework capacities;
- *Promotion of reproductive health*;
- Strengthening of the fight against diseases, and management of emergency situations and disasters;
- Promotion of environment favorable to health.

For the implementation of these strategic axes, priority actions have been defined, taking PEV into account. These actions include strengthening of operational capacities and introduction of new vaccines.

1.2.2.4. Management of Healthcare Services

a) Availability of Services

The country has defined a Minimum Package of Activities (PMA) by level and by health care center category (FOSA) with the Minister's decision number 185/MSPP/CAB/SG/DGSPP of January 13, 1994.

This PMA still remains very theoretical in its application in view of the lack of human, material and financial resources. However, the process of updating of standards and development of human resources is in progress.

b) Accessibility of Services

Geographical accessibility to health care services within a five-kilometer radius increased from 45% in 1995 (EDS-RCA 1994/95) to 65.2% in 2000 (MICS). This improvement does not reflect the disparity between the residence environment (98% for the urban environment and 47% for the rural environment). It must be noted that at least 25% of the population of the remote areas of the country must walk more than 10 km or use hitchhiking to reach a health care center. The majority of health care structures, especially in the rural areas, does not have adequate first aid equipment and materials. For example, a ratio of one (1) bed for 948 inhabitants in 2000 dropped to one (1) bed for 1,025 inhabitants in 2003, which represents a capacity loss of 7.6% in view of the recent events.

Obstacles, limiting accessibility to health care services are numerous and have various characters: administrative, financial, geographic, cultural and behavioral. Significant effort of sensitization of health care providers and recipients must be undertaken to minimize these obstacles and improve the population access to health care services.

c) Use and Quality of Services

In terms of use and quality of health care services, the analysis will be focused on treatment and preventive care. In general, the health care services remain very insufficient and of mediocre quality.

- Treatment Care

According to the data of the National Health Care Information System (SNIS) 2000, the hospital visit rate represents 12% for the whole country; The mean bed occupation rate is 35.4% and the mean duration of hospitalization is four days.

For births in the health care structures, we note that only 44% of pregnant women on the national level have used health care centers in 2000, versus 50% in 1995. The frequency of births in health care centers is related to proximity of location of women giving birth to health care centers[2]. The closer the women are to FOSA, the more they tend to give birth there. This is the case in the urban environment (approximately 74%), and especially in the capital, Bangui (85%) versus approximately 26% in the rural environment.

- Preventive Care

  - *Prenatal Consultations (CPN).* The coverage of priority preventive activities is not sufficient. As a matter of fact, according to 2000 MICS survey, only 34% of pregnant women were seen by a health care staff at least four times during the pregnancy, which is less than in 1994/1995 (40%)[3], i.e. 51% of women in urban environment and only 24% in rural environment[4]. The survey has shown also that the pregnancy follow-up is closely correlated with the women's education level.

  - *Follow-up of Infants* (children from 0 to 11 months). The coverage was 39% in 2000 for the whole country. The average number of visits per infant was 5.2%. This is significantly below the norms, recommended by WHO.

[2] According to the NICS survey, performed in 2000, approximately 53% of pregnant women give birth at home.

[3] EDS 1994/1995

[4] According to MICS 2000, 59% of pregnant women with at least secondary education had at least four prenatal visits, versus 44% for those with primary education and 33% for analphabets.

1.2.2.5. The Infrastructures

The analysis of distribution of public sector health care infrastructures shows an uneven distribution between the regions (Table 3).

Table no. 3: Distribution of health care institutions in the regions

Health Care Regions And Central Level / Health Care Institutions	RS1	RS2	RS3	RS4	RS5	RS6	RS7	Central Level	Total	%
Public										
Central hospitals	NA	NA	NA	NA	NA	NA	NA	4	4	0,6
Regional hospitals	NA	1	1	1	1	1	0	NA	5	0,75
Prefecture or district hospitals	1	3	2	2	2	2	0	NA	12	1,9
Category A health care centers	6	4	6	7	0	8	NA	NA	31	4,75
Category B health care centers	6	3	1	2	7	3	NA	NA	22	3,28
Category C health care centers	19	24	14	19	3	25	NA	NA	104	15,54
Category D health care centers	0	4	3	0	0	0	4	NA	11	1,64
Category E health care centers	0	3	0	0	0	2	8	NA	13	1,9
Health care stations / other	82	53	125	65	36	58	26	NA	445	66,5
MEG deposits	2	3	2	3	3	4	0	NA	17	2,54
LNBCSP	NA	NA	NA	NA	NA	NA	NA	1	1	0,15
STD/AIDS reference centers	NA	NA	NA	NA	NA	NA	NA	1	1	0,15
CNTS	NA	NA	NA	NA	NA	NA	NA	1	1	0,15
UCM (Purchase center)	NA	NA	NA	NA	NA	NA	NA	1	1	0,15
Total of public health care institutions	116	98	154	99	52	103	38	8	668	100
Private										
Nursing stations / other institutions	0	27	8	3	1	17	0	3	59	
Doctor's offices and clinics	0	0	0	0	0	0	28	NA	28	
Wholesale distributors / Other	0	2	0	0	0	0	NA	2	4	
Retail drug stores	0	0	0	0	0	0	22	NA	22	
Pharmaceutical warehouses	ND	ND	ND	ND	ND	4	NA	NA	4	
Total of private health care institutions	0	29	8	3	1	21	50	5	117	
TOTAL for CAR	*116*	*127*	*162*	*102*	*53*	*124*	*88*	*13*	*785*	

Sources: Micro-plans of sub-prefectures / 2003 Health Care Card (Taken from PNDS 2006-2015)

This table shows that the majority of the country's FOSA is represented by community-type structures (approximately 94%). However, out of 785 health care institutions, there are 51 central pharmaceutical warehouses and drug stores. Therefore, the number of FOSA to be taken in consideration in the PPAC is 734.

1.2.2.6. Health Care Human Resources (RHS)

Data collected in September 2004 regarding the public sector health care staff permitted to have a better picture of the RHS situation. The staff of private institutions and non-profit organizations and bilateral and multilateral health care promotion cooperation projects has not been taken in consideration since no data is available.

Therefore, the current data on RHS in CAR is not exhaustive, but permits to have an overview of the situation.

The total staff of public sector health care institutions is 3,314 employees with all categories combined (since 2005), including 1,915 health care providers, operating in various types of health care structures. The regional distribution of the staff is almost homogenous in five of the seven health care regions of the country, where the employees represent between 11.61% and 15.57%. In the other two health care regions (RS7 and RS5), there is a serious lack of employees (region number 7 with 401 persons, or 27.37%; RS5 with 95 persons, or 6.48%). We also note the concentration of specialized physicians in the city of Bangui.

In September 2006, the Ministry of Public Health and Population with support of WHO organized a study of availability and needs for human resources in order to equip the health care system with a sufficient number of competent staff. A human resources development plan is being finalized by the Human resources Department of the Ministry of Public Health and Population. This will permit to minimize the imbalance in the distribution of health care staff throughout the country.

Finally, in the context of macro-economic and financial reforms implemented by the government with the support of international financial institutions (IMF and the World Bank), the health care sector will benefit from hiring facilities in 2007. However, MSPP encourages advisors and management committees, as well as territorial communities, to hire contractual staff in order to fill human resources deficit..

1.2.2.7. Financing of Health Care Services

According to the PNDS 2006-2015 analysis of the situation, the health care sector benefits from four main sources of financing: public financing (own resources and external resources), collectivities, communities and private sector. Table 4 presents the situation of contribution of each financing source.

Table number 4: Mean contribution to health care financing by type of expense in CFA F billion (2000-2004)

Expense type	Mean contribution	Percentage per participant
Public expenses	10, 6	37 %
Private expenses (households and private companies)	15,6	54 %
Other (Communities / Collectives)	2,7	9 %
Total expenses	28,9	100 %

Source: PNDS II work group report

With respect to this, more than one half (54%) of health care financing is provided by private sources, while public expenses represent slightly more than one-third (37%) and other expenses represent 9% (9%). The evolution of public health care expenses from any source of financing is presented in the following table.

Table number 5: Public financing of health care (2000-2005) in thousands of CFA F.

Expense categories	2000	2001	2002	2003	2004	2005
Operating expenses	5,185	5,844	5,924	5,874	5,54	5,474
- Salaries	2,9	3,08	3,1	3,4	3,2	3,2
- Goods and services	2	2,44	2,5	2,2	2,2	2,1
- Other	0,285	0,324	0,324	0,274	0,14	
Investment expenses	5,7	4,7	5,8	4,8	4,7	4,3
- Budget in capital	0,4	0,5	0,9	1,1	0,6	0,4
- External financing	5,3	4,2	4,8	3,7	4,0	3,9
Total of health care expenses	10,885	10,544	11,724	10,674	10,24	9,79
Total Budget of the State	144,5	109,9	159,4	113,6	105,4	61,2

Health care budget as a percentage of the general budget	7,5%	9,6%	7,4%	9,4%	9,7%	16%
% of GDP	1,6%	1,5%	1,6%	1,5%	1,4%	0,8
Health care budget per inhabitant (in hundreds of CFA F)	3532,5	3436,6	3741,6	3387,5*		2417,4

Sources: 2000-2005 Financial Acts

Generally, the health care budget as a percentage of GDP remained constant and low in 2005 (1.5%). Healthcare expenses in the state budget are also low, despite the fact that they increased in 2005 (16%). Healthcare budget distribution per inhabitant is in constant regression, except for 2005.

The analysis of health care expenses by source of financing shows the following facts:

a) Financing from Own Resources of the State

The budget, annually allocated to MSPP for the period 2000-2005 is going through ups and downs and is in constant regression for the period 2003-2005. Except for the year 2000, healthcare expenses are devoted to operations (more than 50%). Despite the willingness expressed, little means are allocated by the Government for investment in the health care sector.

According to the Committee, following up the expense commitments, the level of fund disbursement in the health care sector remains low.

b) *Financing from External Resources*

CAR is benefiting from strong external support for financing of investment expenses in the healthcare sector in form of grants and loans.

In the recent years, the general tendency of external help for the country is decreasing. External financing in favor of the health care sector is at 4 billion CFA Franks in 2004 versus 5.3 billion in 2000, which represents a reduction of, approximately, 25%. We cannot say if it is represented by investment or technical assistance, since no information is available at present to indicate the respective amounts.

However, apart from the financing of AIDS fight activities, which received a loan from the International Development Agency (IDA), which is frozen, almost all health care financing is provided in form of grants.

c) *Community Participation*

- *Coverage of Costs*; This financing mechanism, created in 1994, involves sale of generic medications, consultations, procedures and hospitalizations. This form of community participation is provided by a limited number of health care centers, including management committees and boards. They are dynamic in their response to certain functioning needs, renewal of stock of essential generic medications, contribution to the functioning of the cold chain (fuel and accessories), supply of vaccines (transportation costs), responsibility for payment to advanced strategy teams, or even local hiring of staff. However, the majority of COGES of FOSA is not sufficiently performing for many reasons, including non-respecting of eligibility criteria of their members, lack of training, poor management of resources, etc..

However, the Ministry of Public Health and Population is introducing the measures to make them functional (hiring of new members with emphasis on women and financially responsible persons, training of members, supervision and regular monitoring of activities).

- ***Participation Approach*** is measured by the community contribution in form of manual labor, contribution of materials and direct financial contribution for construction of health care stations and centers and village pharmacies in the communes.
  It must be noted that COGES contribution to financing of health care activities is often underestimated.

d) Private Financing

It mostly refers to private health care institutions (doctors' offices and private clinics). Also, private enterprises operating in the country finance health care activities by covering 80% of medical bills of their staff and also participate in the construction of local health care infrastructure.

1.2.2.8. CAR Expanded Program on Immunization

a) History of PEV

The Central African Government made the Expanded Program on Immunization (PEV) one of its priority health care programs to improve children survival in terms of still very high infant mortality rate.

PEV was introduced in 1979 into the Central African Republic health programs. In view of the low immunization coverage rates, registered until 1985, the Government opted for the Operation Plan for Accelerated Development of the Expanded Program of Immunization (PODAPEV) during the years 1986 – 1990 with the support of multiple multilateral, bilateral and non-governmental organizations. The implementation of this plan permitted to significantly increase the antigen coverage rate among children below the age of 1 and among pregnant women. This success has been made possible thanks to availability of financing, use of three immunization strategies (fixed, mobile and advanced), attention granted by the Government to the implementation of PODAPEV, as well as the peace and security in the country, which facilitated execution of activities on site.

This increase of immunization coverage rates contributed to gradual reduction of infant mortality rate, which dropped, respectively, from 185 per 1,000 in 1975 (RGPH) to 132 per 1,000 in 1988 (RGPH) and 97 per 1,000 in 1995 (EDS 1994/95).

b) Organization of PEV Management Institutions in CAR

i. The Management of the Expanded Program on Immunization

Considered for a long time as one of the services of the Preventive Medicine and Disease Fight Department, the institution of PEV management is represented by creation of the Expanded program on Immunization Department by decree number 05.121 of June 6, 2005.

The PEV Department is one of the technical departments of the General Directorate of Public Health of the Ministry of Public Health and Population. It is structured in two services: logistic and administrative support department and follow-up and data management department.

These services are organized in the following sections:

- Cold chain, transport and communication section;
- Programming, follow-up and evaluation section;
- Section for management of vaccines and other consumables;
- Data management section
- The secretariat.

On the regional level, there is a regional PEV supervisor and a regional focal point for integrated monitoring of the disease. They work full-time for the program. They are hierarchically reporting to the Primary Health Care Coordination and Monitoring Service Director.

On the level of Health Care Prefecture, there is a prefecture PEV director and a prefecture focal point for integrated monitoring of the diseases. They work full-time for the program. They are hierarchically reporting to the Health Care and Supervision Department Director. PEV is integrated into the health care system.

ii. Expanded Program on Immunization Management Bodies in CAR

❖ Inter-Agency Coordination Committee (CCIA) of PEV

The main body overseeing the management of Expanded Program of Immunization activities is the Inter-Agency Coordination Committee (CCIA) of PEV, created by the Ministerial Decision number 0044 MSPP/CAB/SG/DGSPP/SPEV of February 7, 2002. It includes the staff of the health department, related ministerial departments (Finances and Budget, Economy, Planning and International Cooperation, Interior and Territorial Administration, National Defense, Communication), agencies of the United Nations System, bilateral partners, and national and international non-governmental organizations (NGO).

CCIA is presided by the Minister of Public Health and Population and has the following missions:

1. Coordinate activities of partners;
2. Contribute to examination and approval of routine PEV plans, National/ Local Vaccination Days, and integrated epidemiological monitoring of diseases;
3. Mobilize internal and external resources required for execution of activities;
4. Ensure transparent and responsible management of resources, proceeding with the PEV program with regular verifications of use of the program's resources;
5. Encourage and support exchange of information, both on the national operational level and externally;
6. Monitor proper execution of the program;
7. Search for means for solution of problems that might compromise proper implementation of the program.

❖ PEV Technical Support Committee

CCIA is supported in its decision-making process by the PEV Technical Support Committee *(CTAPEV)* created by the decision number *113 MSPP/CAB/SG/DGSPP/DMPM/SPEV of March 11, 2003. CTAPEV is a multi-sector and multidisciplinary structure.*

The CTAPEV is presided by the General Director of Public Health and its mission is:

1. Examine and approve PEV operational action plans;
2. Approve the implementation budgets of these plans;
3. Follow up the execution of the action plan activities;
4. Prepare technical files for the audits;
5. Prepare periodical reports regarding the program execution status;
6. Propose any measures that could improve the program's performance to the inter-agency coordination committee.

c) A Summary of the PEV Vision and Strategies (2003-2007)

In terms of PEV action priorities after 10 years of universal immunization, CAR opted for:

- Elimination of neonatal tetanus in the African region of WHO by 2005: At the 38th Session of the Regional WHO Committee for Africa[5]. The member states made a commitment to eliminate neonatal tetanus (TNN) in Africa by 2005. In accordance with this commitment, CAR established a vaccination schedule recommending at least two vaccination contacts for immunization of pregnant women;
- Eradication of poliomyelitis by 2005;
- Reduction of morbidity and mortality caused by measles by at least 90%;
- And, more recently, introduction of new vaccines and new technologies.

On the operational level, the following strategic orientations have been adopted for the period 2003-2007:

1. Improvement of quality and accessibility to immunization services;
2. Strengthening of the health care information system;
3. Strengthening of the financial support for the program;
4. Strengthening of the PEV logistics management;
5. Strengthening of the staff and management capacity of PEV employees;
6. Strengthening of communication and partnership in favor of PEV;
7. Development of injection safety policy;
8. Introduction of new vaccines;
9. Development of a mechanism for continuous PEV financing;
10. Improvement of program follow-up and evaluation.

1.2.2.9. Target Population and Vaccination Schedule

a) *Target Populations*

The routine PEV applies to children from 0 to 11 months old for the following antigens: BCG, DTC, VPO, VAR VAA and VAT, which is administered to pregnant women.

Locale and National Poliomyelitis Vaccination Days are addressed to children between 0 and 59 months. On the other hand, the mass campaign against measles is targeting children between 6 months and 14 years. In the framework of acceleration of elimination of maternal and neonatal tetanus (MNT), it is planned to administer VAT to women in procreation age. Target populations for routine immunization and additional activities are derived from the total population in the following proportions, described in table 6:

Table 6: PEV target populations

Group	Proportion of the population	Immunization strategy and other interventions
Children of 0-11 months	3.5%	Routine PEV
Children of 0-59 months	17.3%	JNV
Children from 6 months to 14 years	46%	Measles control, catch-up campaign
Children of 6-59 months	15.55%	Measles control, follow-up campaign
Children of 6-59 months	15.55%	Prevention of Vitamin A deficiency
Children of 12-59 months	13.8%	Mebendazole parasite treatment
Pregnant women	4 %	Routine PEV, Elimination of MNT and distribution of MII
Women in procreation age	24.5%	Elimination of MNT (campaigns)

[5] Resolution AFE / RC 38/ R2

b) *Vaccination Schedule*

Tables 7 and 8 below summarize the vaccination schedule in force in the Central African Republic.

Table no. 7: For children (0 to 11 months)

Contact	Age	Recommended antigens
1	At birth	BCG, polio 0
2	6 weeks	DTCoq 1, polio 1 / HepB1, Hib1*
3	10 weeks	DTCoq 2, polio 2 / HepB2, Hib2
4	14 weeks	DTCoq 3, polio 3 / HepB3, Hib3
5	9 months	Measles vaccine
		Yellow fever vaccine

* New vaccines will be added according to this schedule

Introduction of new vaccines must respect this vaccination schedule, sufficiently distributed and known to the field officers to avoid complications. Therefore, three doses of pentavalent vaccine (DTC-HepB + Hib) will be administered starting from the sixth week of life upon introduction of new vaccines at the beginning of 2008.

Table number 8: For pregnant women

ANTIGENS	DOSES	ADMINISTRATION WAY	ADMINISTRATION AGE
VAT 1	0,5 ml	Subcutaneous	At the first contact
VAT2	0,5 ml	Subcutaneous	1 month after VAT1
VAT3	0,5 ml	Subcutaneous	6 months after VAT2
VAT4	0,5 ml	Subcutaneous	1 year after VAT3
VAT5	0,5 ml	Subcutaneous	1 year after VAT4

2. ANALYSIS OF THE SITUATION

The analysis of the situation is presented according to the following sections: (i) Providing of services, (ii) Integrated epidemiological monitoring of the disease, (iii) Equipment; (iv) New vaccines, new technologies and vaccines not used enough; (v) Information and communication; and (vi) Links with other interventions..

2.1. Providing of Services

The following vaccination strategies are used on the national level: The fixed strategy, the advanced strategy and the mobile strategy. They are organized as follows:

- Health care centers and hospitals organize vaccination on a daily basis as a fixed strategy, while health care stations organize it once a week. This is a cause of missed vaccination opportunities.
- The advanced strategy is developed by health care institutions, equipped with means of transportation (44%)
- The mobile strategy is used, generally, during the campaigns.

The "Reach Each District" (ACD) approach has been tried in 2006 during the accelerated campaigns, organized in August, September and October in close to 96% of health care prefectures. The country is planning to extend this to all prefectures in the routine program, starting from 2007.

2.1.1. Routine Immunization Coverage

The detailed analysis of immunization coverage rates, based on the following Table 9, shows that the objectives to achieve at least 80% of immunization coverage have been met in 2006*; This permitted the country to receive the excellence and encouragement price on November 29, 2006 in Maputo (MOZAMBIQUE) for its efforts to increase the immunization coverage in a particularly difficult context.*

This analysis permits also to identify problems and corrective solutions, used to improve the immunization coverage.

Table number 9: Immunization coverage tendencies on the national and district levels from 2002 to 2006

Indicators	Years					Sources
	2002	2003	2004	2005	2006	
1) GENERAL ANALYSIS OF IMMUNIZATION COVERAGE EVOLUTION						
BCG	72%	54,4%	69,0%	59,5%	84,95%	DPEV/MSPP routine data
VPO3	12%	25,6%	48,8%	54,4%	91,12%	
DTC3	23%	27,5%	49,7%	45,6%	88,20%	
VAR	30%	34,6%	69,7%	65,0%	108,067%	
VAA	37%	33,0%	58,1%	58,5%	95,44%	
2) ANALYSIS OF CONTINUITY OF USE AND CAPACITY OF PEV SERVICES TO ADMINISTER A SERIES OF VACCINES (DTC)						
DTC3 COVERAGE	23%	27,5%	49,7%	45,6%	88,20%	DPEV/MSPP routine data
% of districts with DTC 3 >80%	ND	2/24 (8,3%)	3/24(12,5%)	5/24(20,8%)	15/24 (62,5%)	
DTC 1 – DTC 3 dropout rate	ND	45 %	31,5%	28,6%	16,06%	
% of districts with the dropout rate > 10%	ND	100%	100%	96%	14/24 (58,3%)	

The immunization coverage rates show that, apart from VPO3, for which the increase is gradual, the rates for other antigens presented an up and down behavior from 2002 to 2006. However, the comparative analysis of immunization coverage rate tendencies during the first four years of implementation of the 2003-2007 multi-annual plan show an increase, except for 2005 (except for VPO3).

Regarding the 2006 immunization data, the following explanations can be provided:

- The BCG coverage rate is lower in comparison with other antigens, probably because of strict compliance with the vaccination schedule, which does not take children above the age of 15 days into account;
- The difference between DTC3 and VPO3 coverage can be explained by the fact that the DTC vaccine was out of stock on the peripheral level; The same explanation applies to the difference between VAR and VAA;
- The coverage, higher than 100% registered for VAR, is related to vaccination of children outside of target groups or children vaccinated twice. The immunization activities, conducted

by humanitarian organizations, Médecins Sans Frontières… etc.) at the CAR –SUDAN -CHAD border also contribute to the increase of the numerator in the coverage calculation.

With this information in mind, we must note insufficient data quality. Nevertheless, an immunization coverage survey and a DQS are scheduled for 2007 in order to evaluate the quality of this data.

Other explanations of the increase or decrease of immunization coverage rates for the given year are summarized below:

- In 2003:

The country has just emerged form an armed conflict, which lasted from October 2002 to March 15, 2003. An already fragile functioning situation of the Expanded Program on Immunization has been aggravated especially in the formed red zone, constituted by a part of the health care region number 1 (RS1), the whole health care region number 3 (RS3) and a part of the health care region number 4 (RS4). This red zone is inhabited by, approximately, half of the country's population (Appendix 2). The infrastructure and equipment of more than 50% of PEV centers of RS3 and RS4 prefectures have been looted and destroyed and health care officers abandoned their positions.

At the end of the military crisis in March 2003, only 24 functional centers remained out of 91 centers existing before the conflict in the former red zone. The fixed PEV centers of the former yellow zone (Appendix 2) did not have supplies of fuel, other cold chain accessories and vaccines for almost 6 months. In the former green zone, the equipment was available. However, just like other employees and officers of the state, the health care staff was not motivated in view of a significant salary backlog.

The contribution of the permanent PEV partners (OMS, UNICEF, CICR, ROTARY, UE) and GAVI at the end of 2003 permitted to make all PEV centers functional. Despite this support, which started in the second half of 2003, the activities resumed very slowly.

- In 2004:

With the country's progressive return to political and social stability and peace, the immunization coverage rates have improved in comparison with 2003 thanks to restoration of the cold chain, uninterrupted supply of vaccines and other necessary items, resuming of mobile immunization activities thanks to the funds provided by GAVI to support immunization services, strengthening the capacity of agents, contribution of epidemiological monitoring of diseases and organization of the accelerated immunization campaign in the towns of Bangui, Bimbo and Bégoua.

- In 2005**:**

The Central African Republic organized five rounds of JNV Polio among approximately 700,000 children below the age of 59 months and conducted a mass vaccination campaign against measles for children between 6 months and 14 years during the first phase. These mass vaccination activities mobilized all resources of the health care system and had a negative impact on normal execution of the routine PEV activities. This was combined with the fact that the country received the GAVI funds during the last quarter of 2005.

- In 2006:

The Government organized the second phase of mass vaccination campaign against measles, combined with systematic parasite treatment with Mebendazole for the remaining 30% of the target groups in the month of January 2006.

Organization of this activity, which also mobilized health care managers on the national level, had a negative impact on the immunization coverage rates of the first quarter of 2006. In order to correct this negative performance, at the bi-annual review of the integrated epidemiological monitoring system and routine PEV, the PEV managers of all levels of the health care pyramid suggested to the Minister of Public Health and Population and to the Partners to organize a national routine immunization accelerated campaign, combined with the National Child Survival Days (JNSE).

Therefore, three rounds of the PEV routine acceleration campaign have been organized in August, September and October 2006. This permitted to significantly increase the routine immunization coverage rates among children between 0 and 11 months.

Other Analyzed Aspects

a) *Geographic Accessibility and Availability of Vaccination Services*

The country has 734 health care centers, 647 public and 87 private. Inclusion of PEV activities is not obligatory in doctors' offices, nursing stations and private clinics. The majority of doctors' offices is located in the city of Bangui. The following table 10 shows the presence of PEV activities in public and private FOSA.

Table Number 10: Percentage of PEV centers that include immunization activities in their minimal package of activities in 2006.

FOSA categories	Number of FOSA	Number of CPEV	%
Public FOSA	647	330	51.0 %
Nursing stations and private clinics	87	22	25.28%
Total	734	352	47.95%

Generally, 47.95% of public and private FOSA included PEV activities in their PMA with a variation from 25.28% in nursing stations and private clinics to 51% in public FOSA. A more detailed analysis shows that in public FOSA, the activities are included in 95.4% of 22 hospitals, 100% of 131 health care centers of all categories combined and only in 33.2% of 445 health care units of the country.

b) *Capacity of PEV Services to Administer a Series of Vaccines*

Use continuity and capacity of immunization services to administer a series of vaccines to children between 0 and 11 months was studied through DTC3 coverage, while the service quality and the quality of communication between health care employees and parents was measured by the drop-out rate between DTC 1 and DTC 3.

The table 9 above summarizes the RCA situation in terms of these two indicators. The analysis shows a gradual increase of the proportion of districts that have a DTC3 rate higher than 80% and a reduction of drop-out rates, despite the fact that they remain above 10%.

c) *Staff's Technical Capacity*

The main problems include:

- Quantitative and qualitative staff insufficiency. The majority of employees administering PEV are community health agents (first aid nurses and birth attendants).

- Absence of staff, trained in restorative maintenance of cold chain equipment on the intermediate and peripheral levels.
- Staff supervision at all levels in irregular and, in majority of cases, nonexistent.
- Low morale of the staff, caused by the backlog of unpaid salaries and absence of other incentive methods (regular supervision, congratulation letters, training stages, etc.). Some community health agents work almost on a volunteering basis and often in very difficult conditions.

2.1.2. AVS-Polio and Measles Vaccine Coverage

The Central African Government adopted the initiatives or eradication of poliomyelitis, control of measles and elimination of maternal – neonatal tetanus (MNT). It successfully organized AVS polio campaigns since 1996, except for 2002.

A mass immunization campaign for measles control has been organized in two phases (for 70% of the target groups in October 2005 and for 30% in January 2006).

The country adopted a strategic plan of MNT elimination. A tetanus immunization campaign is scheduled in two phases for 2007 and 2008. The AVS polio and measles results are presented, respectively, in Tables 11 and 12 below.

Table Number 11: Evolution of VPO immunization coverage rates according to AVS organized from 1996 to 2005.

Years	AVS Types	Population	Immunization Coverage					
			First round	Second round	Third round	Fourth round	Fifth round	Sixth round
1996	JNV	555 395	81,5 %	75 %	-	-	-	-
1997		574 466	77 %	82 %	-	-	-	-
1998		621 739	88 %	92 %	-	-	-	-
1999		597 436	105,5 %	105 %	-	-	-	-
2000		620 589	103%	103 %	-	-	-	-
2001		632.422	94,09 %	101,53 %	97,66 %	-	-	-
2002	No AVS because of military and political problems							
2003	JNV	656 211	83,67%	104,08%	-	-	-	-
2004	JLV/Responses	470 901	104%	111%	-	-	-	-
	JNV	677 952			88,6%	98%	101,69%	100,76%
2005		694 901	101%	103%	103%	102%	105	

The AVS polio results are generally satisfactory, which permitted to stop the circulation of the wild poliovirus (PVS) since December 2004.

Regarding the measles control initiative, CAR organized a catch-up campaign, targeting children from 6 months to 14 years in two phases as described in the 2004 – 2008 strategic plan:

- The first phase in October 2005 in the health care regions number 1, 2, 3 and 7;
- The second phase in January 2006 in the health care regions number 4,5 and 6.

The results of this campaign are presented in Table 12 below:

Table Number 12: VAR immunization coverage rates obtained at the National Campaign of Immunization Against measles (CNVR) of October 2005 and January 2006.

Phases of the campaign	Number of districts	Effective number of children from 6 months to 14 years	Effective number of vaccinated children	%
First phase (October 2005)	15	1 302 258	1 183 593	90,9%
Second phase (January 2006)	9	543 327	515 956	95,0%
Whole CAR	24	1 845 859	1 699 549	92,1%

Despite the fact that the objective of 95% of immunization coverage has not been achieved, CAR has made a considerable progress towards control of measles.

2.1.3. PEV Experience in Integration of Interventions

Vitamin A, Mebendazole and Mosquito Screens Impregnated With Insecticides

The fight against micronutrient malnutrition, particularly the fight against avitaminosis A through Vitamin A supplements given to children from six to 11 months and immediate post-partum women (45 days after giving birth) has been introduced in the routine PEV since 2004.

Moreover, in the AVS polio and measles campaigns, as well as during the routine immunization acceleration campaign integrated within the National Children's Survival Days (JNSE), the packages of other services are included – Vitamin A supplements for children between 6 and 59 months and immediate post-partum women (45 days after giving birth), Mebendazole parasite treatment for children from 1 to 4 years, and distribution of mosquito screens impregnated with insecticides (MII) to children below the age of 5 and post-partum women.

The following Tables 13 and 14 present the coverage rates obtained for parasite treatment among children between 12 and 59 months and the coverage rate for administration of vitamin A supplements among children between 6 and 59 months and immediate post-partum women.

Table 13: Mebendazole coverage rate from 2005 to 2006

Years	Interventions including providing of vitamin A supplements	Operation dates	Covered areas	Targeted age group	Number of children targeted	Coverage rate in %
2006	JNSE	August	National	12-59 months	562 723	58,00%
	CNVR Second phase	January	9 districts		162 998	89,20%
2005	CNVR First phase	October	15 districts	12-59 months	390759	91,80%

Source: DPEV/MSPP

Except for National Children's Survival Days (JNSE), where the mebendazole coverage rate is low, we note good coverage in the first and second phase of the National Campaign of Immunization Against Measles (CNVR).

Table 14: Vitamin A coverage rate at AVS from 1999 to 2006.

Years	Interventions including providing of vitamin A supplements	Operation dates	Covered areas	Targeted age group	Number of children targeted	Coverage rate in %
2006	National Children's Survival Days	August	National	6-59 months	630 083	59,68%
				Immediate post-partum women	155 801	14,00%
2005	JNV Polio	May	National	6-59 months	624 608	88,4%
		November			624 608	83,10%
2004		August			609 373	73,40%
		December			609 373	85,65%

2003		November			592.950	83,67%
2002	JLV measles	July	Bangui, Bégoua and Bimbo	9 – 59 months	86.710	99,86%
2001	JNV Polio	December	National	6–59 months	567 778	90,26%
2000					556 734	95,94%
1999					538 339	110,5%

Apart from low Vitamin A coverage rates registered for JNSE and JNVS polio of August 2006, the Vitamin A supplement coverage, generally, exceeds 80%.

2.2. New Vaccines, new Technologies and Vaccines Not Used Enough

2.2.1. *Introduction of New Vaccines and Vaccines Not Used Enough*

CAR PEV has a long experience in introduction of new vaccines and vaccines not used enough.

As a matter of fact, vaccination against yellow fever has existed since the creation of large endemic services in 1954. During that period, immunization assumed a form of mobile strategy mass campaign with a well-defined schedule. It must be remembered that the 17 D vaccine against yellow fever (Institut Pasteur of Dakar) was administered by the scratch method.

With preparation and adoption of the Operation Plan for Acceleration of the Expanded Program on Immunization (PODAPEV) in CAR in 1986, the yellow fever vaccine is administered to children from the age of 12 months in injectable form to the right forearm. During the last years, it is given to children starting from the age of 9 months as an anti-measles vaccine.

It must be remembered that before GAVI support as of 2002, the evolution of the yellow fever immunization coverage has never exceeded 40%, despite the efforts deployed by CAR, since the resources mobilized covered only 30% of the annual needs. On the other hand, introduction of this vaccine in the routine program was not described in a detailed plan.

A gradual increase of VAA coverage registered since 2003 (33%) in order to reach 98.6% in 2006, is the result of GAVI's support and the efforts of the country in the actual implementation of the action plan activities for strengthening of the yellow fever vaccination. This vaccine has not been used enough for a long time.

This experience will be taken into account in the current context of introduction of vaccines against viral hepatitis B and Haemophilus Influenzæ of type b in 2008.

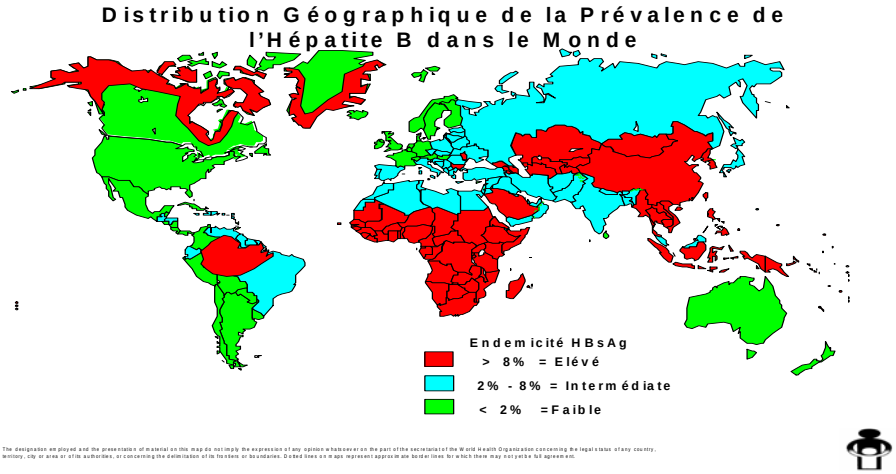
2.2.2. Viral Hepatitis B Situation

a) In the World

Hepatitis B is a major public health problem in the world and, especially, in Africa.

According to the most recent WHO estimations (WHO/V&B/01.28), approximately 30% of the world population is seropositive for Hepatitis B virus, which means close to two billion persons, 350 million of whom become chronic carriers. Chronic carriers are exposed to a high risk of death (approximately 500,000 to one million of deaths per year), causes by liver cirrhosis or liver cancer. The Sub-Saharan Africa constitutes a highly endemic area. The prevalence of the surface antigen exceeds 8 % (HBsAg > 8%), as shown on the following map..

Figure number 2: Geographic distribution of prevalence of Hepatitis B in the world



b) In CAR

There are numerous studies showing that the prevalence of viral hepatitis B in the country is similar to that of the majority of other Sub-Saharan African countries. Therefore, this disease represents a public health problem. CAR, just like other Black Africa countries, is classified as a highly endemic county for hepatitis B virus (see the map above).

As a matter of fact, a study performed in 2005 on 525 patients has shown hepatitis B endemicity in pediatric environment with a global prevalence estimated at 22.3%. A considerable number of acute viral hepatitis cases has been observed in children below the age of five years (19.5%), characterized by presence of HBs antigens. Moreover, for 25% of the studied population, the disease was contracted more than one year before the study, while for 75%, it occurred 3.7 years before the study (prevalence of Hepatitis B in the Bangui Pediatric Complex from November to December 2005).

Therefore, the country is planning to introduce vaccination against Hepatitis B in 2008 to prevent hepatitis complications caused by this virus, such as cirrhosis and primitive liver cancer.

2.2.3. Situation of the Haemophilus influenzae of Type b

a) In the World

Haemophilus influenzae type b infection is a public health problem in many developing countries. .

In Africa, the number of children below the age of 5 dying each year from meningitis is, currently, estimated at 160,000. The mortality rates vary between 20 and 60% among hospitalized patients. Haemophilus influenzae type b (Hib) infections constitute the major reason for bacterial meningitis (40 – 50% of all cases below the age of 5 years). The bacterial meningitis is fatal if it is not treated immediately with appropriate antibiotics. Even with the appropriate treatment, 3 – 25% of sick children die and among those who survive the infection, permanent consequences may develop, leading to long-term disability (estimated at 15 – 35%), such as mental retardation, deafness, speech difficulties, which are difficult to handle by the individual or his environment. In absence of vaccination, Hib causes close to 400,000 deaths per year.

According to many studies, Hib is the cause of more than 20% of severe pneumonias with a mortality rate varying between 2 and 20%.

b) In CAR

The Haemophilus influenzae type b infection is a public health problem in many developing countries. It is associated with high mortality of 30 to 70 cases for a population of 100,000 children below the age of 5. Complications, associated with this infection, such as mental retardation, deafness or speech difficulties, are difficult to handle by the individual or his environment.

A recent study of acute bacterial meningitis and sensitivity to antibiotics, performed in the Bangui Pediatric Complex from October 2004 to April 2005 and involving 229 children, confirmed these tendencies in the following conclusions:

- S. pneumoniae and H. influenzae are the most frequent causes of ABM among children in Bangui (respectively, 41% and 27%).
- The high global mortality from ABM (45.8%) is related more to the delay in starting appropriate treatment than to resistance of antigens involved to antibiotics.
- S. pneumoniae agent of MBA remains very sensitive to penicillin G.
- 70% of H. influenzae responsible for ABM host a β-lactamase and 29% have a reduced sensitivity to chloramphenicol.

Therefore, the country is affected by health problems associated Haemophilus influenzae of type b.

In view of lack of side effects and confirmed efficiency, WHO recommends inclusion of combined anti-Hib vaccines in all systematic immunization programs for infants. The lack of data, regarding local monitoring, must not delay the introduction of these vaccines, especially in the countries where regional data indicates a high occurrence of these diseases. Therefore, CAR decided to introduce the vaccine in the routine PEV as of 2008.

2.3. Integrated Epidemiological monitoring

2.3.2. Data Management

The collected data originates from the basic system (collection of routine data in health care institutions). The data collected from the health care institutions, both public and private, implementing PEV, is compiled and used by the health care prefectures. All monthly reports of health care prefectures are compiled and used on computer support on the central level and then sent to partners. Unfortunately, this data is not often analyzed and used locally. The 2006 completeness rate is 78.1% versus 64% in 2005.

The program benefited from an external audit of data quality in 2004 with a satisfactory verification factor (82.6%). As a result of this control, the following recommendations have been made:

- Strengthening of the autonomy of the PEV department in data processing, monitoring, evaluation, supervision and feedback on all levels;
- Making the targeting tools uniform and regular maintenance of registration and stock management tools;
- Monitoring of promptness and completeness of CS and district reports;
- Regular organization of data quality control.

2.3.2. Integrated Epidemiological monitoring of Diseases

Before 1998, epidemiological monitoring in CAE was performed by surveillance sites, consisting, essentially, of hospitals and category A centers. Starting from 1998, with the support of WHO, the Preventive Medicine and Disease Fight Department set up an integrated epidemiological monitoring system. This active monitoring is based on weekly notification of cases of acute flaccid paralysis (AFP), cholera, measles, yellow fever, meningitis and neonatal tetanus. From 1998 to 2004 the system operated with five focal points assigned to the health care regions.

Since 2005, the system has been decentralized and further integrated into the national health care system. To do so, 26 formed focal points have been created by the Minister of Public Health and Population to cover seven health care regions, 16 health care prefectures and 8 health care districts of Bangui. The Institut Pasteur of Bangui plays and important role in case confirmation.

2.3.4. Monitoring of Acute Flaccid Paralysis (AFP)

Since 2005, with the restructuring of the monitoring system based on the principles of visibility, feasibility and integration, the performance indicators have become clearly better in comparison with 2004, when we faced an intense circulation of wild polio virus with 30 confirmed cases.

The following results have been obtained:

- *Stopping of circulation of wild polio virus in CAR since November 2004.*
- Meeting the targets for the main indicators in 2006 on the national, regional and prefecture (district) levels.

✓ *The annualized non-polio AFP case rate is 7.98 (> 2) and the percentage of stool samples performed in 14 days is 95 % (>80%). See Table 15 below.*

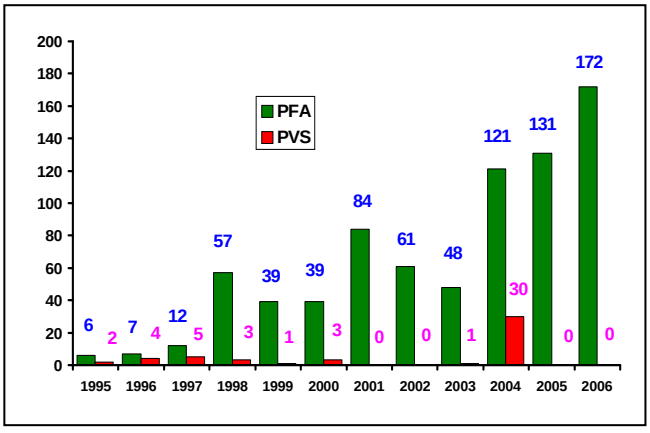
Table number 15: AFP monitoring performance in 2006 in comparison to 2005

Province	Expected cases	Reported cases		Annualized non polio AFP rate		% of stools in 14 days		PVS		Compatible cases		% of non polio enterovirus		Quality index	
		2005	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006	2005	2006
RS 1	**3**	13	**14**	4,28	**4,38**	92%	**100%**	0	0	0	0	46%	**29%**	3,8	4,3
RS 2	**4**	26	**48**	**8,01**	**12,43**	92%	**96%**	0	0	0	1	35%	**33%**	7,3	12,7
RS 3	***4***	26	***20***	6,86	**4,73**	88%	**100%**	0	0	0	1	31%	**30%**	5,9	4,4
RS 4	**3**	11	**25**	4,33	**9,21**	82%	**96%**	0	0	0	0	45%	**40%**	3,5	8,9
RS 5	**1**	10	**17**	11,01	**14,24**	100%	**88%**	0	0	0	3	10%	**18%**	11	16,2
RS 6	**2**	9	**16**	3,64	**5,62**	89%	**81%**	0	0	0	1	22%	**44%**	3,2	5,2
RS 7	**3**	36	**32**	8,81	**9,54**	83%	**100%**	0	0	0	0	36%	**47%**	7,3	9,2
RCA	21	**131**	**172**	**6,52**	**7,98**	**89%**	**95%**	0	0	0	6	**34%**	**35%**	5,7	7,2

Sources: DMPM 2006 statistics

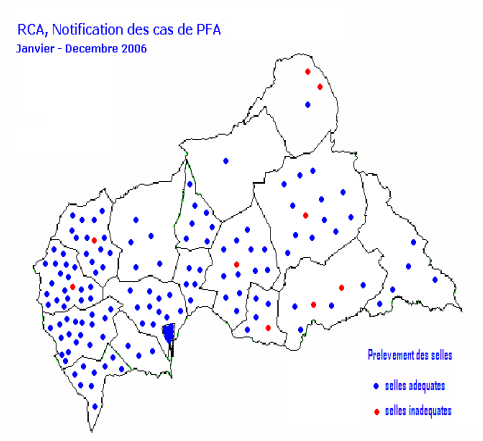
✓ An improvement of AFP case detection from 1995 to 2006 (see the graph below)

Graph no. 3: Evolution of the number of detected cases between 1995 and 2003



✓ An improvement of AFP case detection in all districts

Figure 3:



✓ The promptness rate of prefecture and regional monitoring reports are above 80%. Moreover, all health care regions have a non-polio enterovirus rate above the target of 10%.

2.3.4. Measles Monitoring

In 2003 and 2004 measles persisted in an endemic manner throughout the year, making the transmission reduction period less evident. The immunization coverage rate until 2004 was below 50%, which explained occurrence of epidemics affecting children from 6 months to 15 years. The measles situation is presented in the following Table 16.

Table no. 16: Number of suspected cases and deaths caused by measles from 2000 to 2006

Districts	2000		2001		2002		2003		2004		2005		2006	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Bangui	2255	19	51	2	3	0	1	0	46	0	19	0	33	0
Ombella-M'Poko	0	0	38	1	10	0	119	0	93	4	117	8	19	0
Lobaye	140	0	168	50	4	0	44	1	55	6	195	18	15	0
Mambéré-Kadéi	54	0	169	12	6	0	0	0	46	2	28	7	1	0
Sangha Mbaéré	12	1	79	11	0	0	2	0	1	0	47	1	11	1
Nana-Mambéré	111	1	48	12	495	11	5	0	154	15	4	0	9	0
Ouham	32	1	1	0	25	0	443	86	225	36	0	0	0	0
Ouham –Pendé	3	1	15	15	10	0	24	0	99	3	2	0	6	0
Ouaka	55	5	96	18	12	1	0	0	143	7	4	0	2	0
Kémo	0	0	429	24	287	19	5	0	26	5	0	0	1	0
Nana-Gribizi	43	2	137	6	8	1	0	0	41	1	1	0	2	0
Haute-Kotto	75	0	753	53	6	0	4	0	7	0	1	0	2	0
Bamingui-Bangoran	0	0	42	0	10	0	2	0	2	0	41	3	1	0
Vakaga	408	16	2	0	8	0	0	0	1	0	0	0	0	0
Mbomou	181	5	175	14	5	0	2	0	6	0	2	0	1	1
Haut-Mbomou	1	0	7	0	0	0	1	0	3	0	8	0	8	0
Basse-Kotto	3	0	587	89	0	0	0	0	348	13	4	0	2	0
General Total	3373	51	2797	307	889	32	652	87	1296	92	473	37	113	2

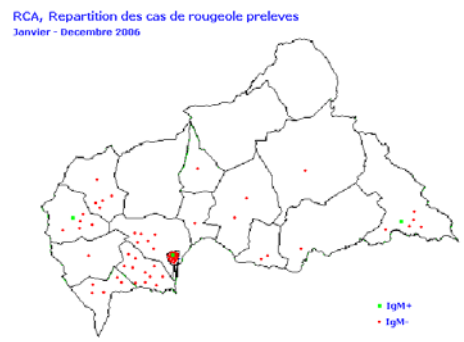
Sources: DMPM 2006 statistics

A strategic control plan for the period 2004 –2008, as well as an implementation plan, have been adopted, respectively, in 2004 and 2005. The strategic plan also emphasizes the measles monitoring. It has been set up in 2004 and based on the existing cases, but has been strengthened in 2006. The Ministry of Public Health and Population with the support of WHO organized training in 19 prefecture focal points, 7

monitoring regional focal points and for managers of health care institution laboratories of the whole country, regarding case by case measles monitoring on the operational level.

In 2006, for 78 blood samples in cases of measles suspicion, three positive cases have been found, including one case in Bangui in the seventh district, one case in Nana Mambéré and another in Haut Mbomou. Case by case measles monitoring performance is improving: 20 out of 24 districts (83.3%) investigated at least one suspected case. The annualized investigation rate on the national level is 1.9 / 100.000.

Figure 4:



2.3.4. Yellow Fever Monitoring

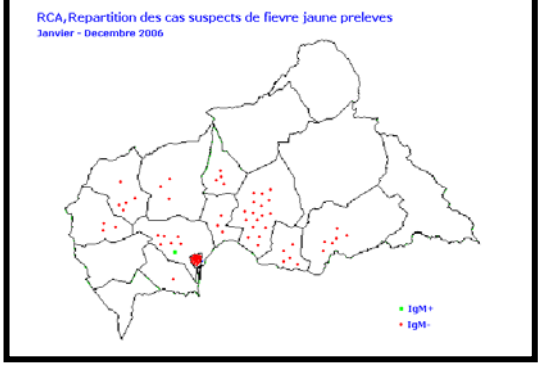
The monitoring based on Yellow Fever cases has been strengthened in 2006, given that the country is located in a risk area. There has been a clear improvement of case reporting in 2006 with the total of 123 suspected cases of yellow fever reported from January to December 2006 versus 2005, where only 11 cases have been reported.

CAR had its first yellow fever epidemics after it gained independence. The suspected case was registered on November 19, 2006 and was reported to the health care prefecture on November 20, 2006. The Institut Pasteur of Bangui confirmed the presence of yellow fever IgM three days later. An investigation of the case was conducted within 48 hours, followed by an entomologic investigation. Response has been organized in order to avoid propagation of the disease to other regions of the country, especially to Bangui.

Below are some indicators of the yellow fever monitoring system in 2006:

- 123 cases reported in 2006, including one IgM+ case
- % of districts that reported at least one suspected case of yellow fever during the year: 18/24 =75%
- Blood samples, collected from patients suspected of yellow fever = 100 %
- Percentage of cases, investigated within 48 hours =100 %

Figure 5:



2.3.4. Monitoring of Maternal and Neonatal Tetanus (MNT)

MNT case by case monitoring still remains very poor: 17 cases of MNT have been reported in seven health care districts, but only two districts, or 29%, conducted an investigation. This poor performance in terms of reporting and investigation of PMN cases, certainly caused by insufficient epidemiology monitoring, does not permit to calculate the occurrence rate by district with certainty. In the strategic plan of PMN elimination, it was specified that starting from 2007, the country would organize mass campaigns against tetanus, targeting all women in procreation age. However, the MNT monitoring will be strengthened as of 2007 with the implementation of a strategic plan for elimination of this disease.

2.3.4. Post-Vaccination Adverse Effects (MAPI)

Data on post-vaccination adverse effects is not available, since such monitoring is not effective yet.

2.3.2. External Review of Epidemiological monitoring

The external review of epidemiological monitoring has been organized between November 06 and 11, 2006, after multiple reports related to internal constraints. The evaluation has been conducted on the central level of MSPP in five out of seven health care regions, nine of sixteen health care prefectures and eight districts of Bangui. In total, 144 health care institutions have been visited. On the community level, 26 practitioners have been interviewed and 123 cases of AFP (44 reported in 2005 and 79 in 2006) have been visited, including 86 examined physically. As a result of this review, the evaluators drew the following conclusions:

- The AFP monitoring system is operational and sufficiently sensitive to detect PVS circulation on time;
- Monitoring based on cases of measles, yellow fever and TNN has been started. However, we note insufficient case reporting from January to October 2006;
- The process of implementation of the integrated monitoring is in progress; However, the stage of training of health care staff has not been started yet.

The review clarified, however, that the disease monitoring system is affected by the socio-economic and security environment of the country. Recommendations were made on various levels of the system in order to strengthen health care officers capacities, coordination, follow-up and evaluation of epidemiological monitoring activities, cooperation between the sectors and local partnership.

2.3.2. Routine Monitoring

- The national health care information system reports cases and deaths, registered in all health care institutions of the country. However, a low completeness and promptness rate of this routine data has been noted.

2.4. Logistics

2.4.1. Cold Chain

The PEV department has 4 cold rooms (60 m^3 for the positive compartment and 40 m^3 for the negative compartment), 375 refrigerators and 68 freezers.

According to the inventory performed in 2006, more than 90% of equipment is of Sibir brand and has a mean age of 3 years. The equipment that is 8 years or older represents only 2%, or 173 refrigerators that will be replaced within the following 5 years.

The total storage capacity for all PEV structures of the country is summarized in the following Table 17.

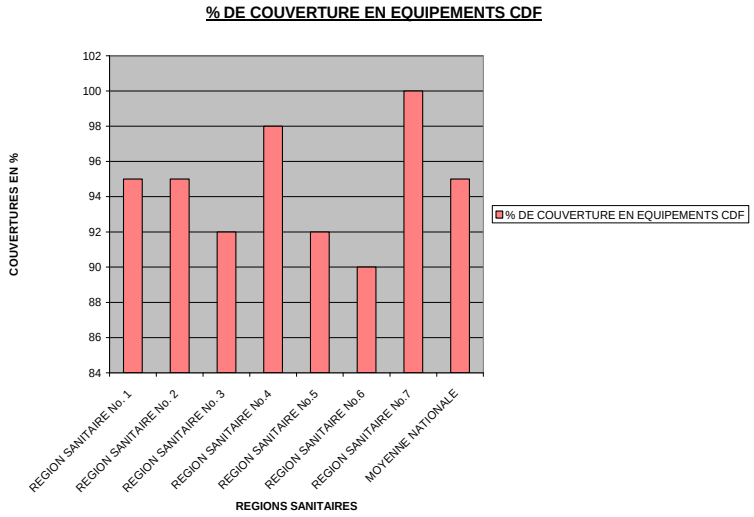
Table number 17: Available vaccine storage capacity on the national level

REGIONS SANITAIRES	POSITIVE(litres)	NEGATIVE(litres)
RS 1	2 951	3 386
RS2	3 679	3 567
RS3	4 273	3 005
RS4	3 080	2 880
RS5	1 980	1 454
RS6	2 988	2 539
RS7	1 375	1 428
TOTAL RS	**20 326**	**18 259**
NIVEAU CENTRAL	**60 990**	**45 832**
TOTAL PAYS	**81 316**	**64 091**

However, health care institutions which have difficult access (12.5%) have fuel-based cold chain equipment instead of the solar equipment.

The national coverage in cold chain equipment is 95% on the average with a variation form 100% in the health care region number 7 to 90% in the health care region number 6 (Figure 6 below).

Figure 6.



Source: Cold chain evaluation and inventory report, MSPP and UNICEF, Bangui, September 2006

Generally, all prefecture bases are equipped with at least one refrigerator and one freezer and several ice rooms. All vaccination centers are equipped with a refrigerator, at least two vaccine holders and an ice room. Centers become non-functional as a result of refrigerator break-down, caused by the following reasons:

- Malfunctioning of COGES that is responsible for buying fuel for the PEV activities.
  COGES generally have low financial capacities and some of their members have a poor management knowledge. Often they do not treat immunization as a priority among their activities. There are cases of refusal to buy fuel for PEV refrigerators and for advanced and mobile strategies. In other cases, COGES does not work at all and, therefore, the refrigerator is not operational and there are no vaccinations.
- Non-availability of fuel in all stations of the zone. Some health care prefectures with difficult access (Vakaga, Haut Mbomou, Bamingui Bangoran, Mbomou) do not have fuel distribution stations, which results in too high fuel cost (cost varying between 400 and 1500 FCFA per liter). These prefectures must be equipped with solar refrigerators.
- Constant stock out of fuel and other cold chain accessories (sleeves, glass, burners).

2.4.2. Maintenance of Equipment

Within the Ministry of Public Health and Population, there is a Biomedical Equipment Maintenance Service (SMEB). However, there is no national policy regarding restorative maintenance of the cold chain. The radio equipment is insufficient and obsolete.

2.4.3. Transport

In the framework of PEV support and strengthening of integrated active monitoring, UNICEF and WHO delivered 7 TOYOTA Hilux vehicles (including 4 for the districts, affected by the recent military crisis, two for the PEV management and one for the Health Care service inspection) and 43 motorcycles for animation and supervision of activities and transport of advanced and mobile strategies teams.

However, the problems of the program's motor vehicle fleet are related to their insufficiency and maintenance on various levels. Finally, the poor state of the internal road network, consisting mostly of rural roads, in one of the main logistic barriers since it is difficult to access certain areas during the rainy season.

2.5. Supply, Distribution and Management of Vaccine and Consumables

The supply system of vaccines and consumables has been functioning satisfactorily thanks to the support of the partners. The central level, considering its storage capacity, could receive supplies once a year. However, in practice, supplies are received twice a year.

Since 2001, the Central African Government provided a budget line "Purchase of Vaccines" in the state budget, but the funds have never been sufficient to ensure independent vaccinations.

2.5.1. *Management of Vaccines and Consumables*

Distribution of vaccines and consumables is organized according to the following scheme:

- From the central level to the health care regions once per quarter
- From the health care region to the health care prefecture: once per quarter
- From the health care prefecture to the health care centers – once per month.

On the central level, vaccine management has been computerized since 2005. A review of all PEV program management tools is scheduled for 2007, taking into account the aspects, related to the extension of the "Reach Each District" approach on the national level.

PEV management tools must be reviewed in order to adapt them to new vaccines (targeting files, vaccination registers, supervision, reporting and MASPI investigation files, vaccination cars, files for monitoring of vaccine losses and loss follow-up, vaccine stock files, vaccine temperature monitoring sheets, drug monitoring files, etc.).

The on-site evaluation permitted to note insufficiencies on all levels of the management system of vaccines and consumables:

- Lack of fuel to assure active distribution of vaccines;
- Poor prevision of vaccine needs and order delays;
- Refrigeration supply vehicles not adapted to certain roads (in very poor conditions);
- Absence of stock follow-up on the intermediate and peripheral level. This situation results in stock outs in certain locations and excessive supplies of vaccines in others.

- Staff not trained in management of vaccine stocks;
- Lack of control of target populations and poor previsions of needs;
- Non-use, insufficient use or total absence of vaccine and consumables management tools in many vaccination centers;
- Lack of temperature monitoring sheets and monthly vaccination report forms in certain health care institutions

These insufficiencies, and many other ones, result is stock-outs, excessive stock and / or considerable loss of vaccines (vaccines that are damaged, frozen, etc.) on the intermediate and peripheral levels.

2.5.2. *Loss of vaccines*

Losses of vaccines, associated with open bottles, reported on the national level, are, respectively, 33,14% for BCG, 12,96% for DTC, 11,96% for VPO, 23,18% for VAR, 24,36% for VAA and 10,34% for VAT. The objectives established in the 2003-2007 vaccine loss reduction plan have been met, in particular for DTC (22%), VAR (30%) and VAA (30%). This plan will be reviewed during the preparation of the present PPaC. However, the real losses will be higher than the numbers presented above if we take the losses on the intermediate and peripheral levels into account..

2.5.3. *Injection safety*

The national PEV injection safety policy reaffirms the essential need to adopt all proper strategies in the strategic plan referring to this field.

In this context, the Government with the support of GAVI equipped all vaccination centers with self-locking syringes, disposable sterile syringes for reconstitution of BCG, VAR and VAA vaccines, and security boxes in compliance with the support of this institution for injection safety. For illustration purposes, GAVI made sufficient quantities of injection safety equipment available to CAR during the period 2003 - 2006. This equipment has been made available in all FOSA performing PEV.

Table No. 18: Injection safety equipment delivered in the period 2003 to 2006

Injection safety equipment types	2003	2004	2005	2006	Supply sources
Self-locking syringes 0.05 ml (BCG):				193 600	UNICEF
Self-locking syringes 0,05 ml (BCG):	121400	117 600	130 000		GAVI
Self-locking syringes 0,5 ml (DTC, VAT, VAR and VAA)	497 800	534800	554 400		GAVI
Self-locking syringes 0,5 ml (DTC, VAT, VAR and VAA)(campaign)			2 180 300		UNICEF
Dilution syringes 2 ml (BCG)				19 360	UNICEF
Dilution syringes 2 ml (BCG)	12 200	11 800	13 000		GAVI
Dilution syringes 5 ml (VAR and VAA	18 500	26 200	28 900		GAVI
Dilution syringes 5 ml (VAR and VAA) (mass campaign against measles)			218 100		UNICEF
Security containers	7 250	7 700	8 100		GAVI
Security containers			23 984	2 130	UNICEF

UNICEF has also supported the PEV department, providing injection safety equipment within the framework of organization of the national campaign of mass immunization against measles and also for the routine PEV.

However, with the withdrawal of GAVI support for the injection safety, the problem of regular supplies of injection safety equipment for vaccination centers will arise in view of the limited number of partners who support routine PEV.

Regarding the disposal of biomedical waste, the means used by the majority of vaccination centers is burning with burying, because of the lack of incinerators. This method does not provide sufficient guarantees for security of population and health care staff. However, hospital waste management plan is being validated. Its immediate implementation will permit to ensure real security.

2.6. Communication

Health promotion activities are not developed enough.

In fact, the communities and families are not sufficiently informed about the importance of immunization. Also, antigen coverage is insufficient, drop-out rate is high for multiple-dose vaccines and there are misses vaccination opportunities. This situation can be explained by:

- Insufficient technical, managerial and equipment capacities in terms of communication for change of behavior at all levels
- Weak involvement of opinion leaders, politicians and communities
- Weak involvement of mass media (public and private) in the PEV routine.

In order to develop better operational strategies and mobilize more families and communities in favor of the health promotion in general and, specifically, the PEV promotion, the IEC department has been created within the Health care Communication department by Decree number 05/121 of June 06, 2005, organizing the functioning of the Ministry of Public Health and Population.

The health promotion communication directives, as well as an integrated plan of PEV communication, are being prepared to correct these insufficiencies in accordance with the strategic orientations, elaborated and adopted in 2005.

Meanwhile, this department experiences enormous difficulties in its functioning.

2.7. PEV Financing

The analysis of the financial situation reveals the Government's willingness to increase the financial resources, devoted to health care (see Table 19 below). The funds, granted by the Government to the Ministry of Public Health and Population (MSPP) have increased by 5% from 2004 to 2005, despite the Treasury Department problems, incurred following the recent military-political crises. Moreover, we noted an increase of funds, granted to the Ministry of Public Health and Population by the Government from its own resources in comparison with the total health care expenses (60.3% in 2005 versus 47.4%). However, we must note that the health care expense proportions are still very low in comparison with the gross Domestic Product (GDP).

The funds, granted to the Expanded Program on Immunization over the same period represent, on the average, 14.18% of the total of credits allocated to MSPP (see Table 19 below). We also note an increase of the budget part, granted to PEV in the health care expenses (16.10% in 2005 versus 12.26% in 2004). However, it must be noted that the part of funds granted to PEV is a very small fraction of the total expenses of the Government (1.08% in 2004 and 1.40% in 2005).

Within the framework of the DSRP implementation plan, the Government is planning to allocate 15% of PPTE resources to health care in accordance with the recommendations of the meeting of heads of states – members of WHO held in Abuja in 2003.

Table number 19: An overview of credits granted to PEV in CAR, 2004-2005 in CFA F

	2004		*2005*	
Item	*Credits granted*	*Execution*	*Credits granted*	*Execution*

Global budget	105.468.540.000	52.443.000.000	113.179.835.000	88.895.095.480
Health budget	9.315.871.000	ND	9.793.760.000	7.592.013.857
PEV budget	1.142.540.000	ND	1.576.540.000	ND
PEV part of the government budget (% of the total of government expenses)	1,08%	ND	1,4%	ND
PEV part of the health budget (% of the total of health expenses)	12,26%	ND	16,1%	ND

Sources: Financial acts 2004/2005 and work document for the IMF mission of October 28 to 11 November 2006 of the Structural Adjustment Program Follow-up Technical Committee.

However, PEV financing relies mostly on external aid. The resources coming from UNICEF, WHO, GAVI and ROTARY International via WHO represents 80% of the actual investment financing of the Expanded Program on Vaccination. For this type of financing, we note that the number of development partners financially supporting the routine PEV is limited after withdrawal of Japan (a major PEV sponsor). Certain partners (NGO such as MSF, COOPI, CICR, etc.) conduct PEV activities essentially in the conflict areas on the one-time basis.

Community financing through partial covering of health care costs is an opportunity to support the PEV. Among the essential expenses of the management boards or committees (COGES) of health care institutions, there is purchase of fuel and accessories for the functioning of the cold chain and for the operational costs of the advanced strategy. Some COGES assume their responsibilities regarding this issue, while other do not. This happens for various reasons, including: preference for renewal of equipment and consumables for treatment care, difficulty obtaining funds because of financial problems, resulting in lower frequency of health care institution visits, poor management of funds by some COGES members. Generally, the funds generated by covering of costs of public health care training are not controlled properly.

The vaccination system is facing insufficient financial resources and financing stability difficulties in case of withdrawal of partners. Evaluation of the financing volume of the vaccination system by the partners is difficult in view of insufficient coordination of interventions of the sector partners on all levels. This results in difficulty to determine the costs of the program, work is done twice and resources are wasted.

Despite the existence of SNIS and of the PEV information system, insufficiency of production and processing of financial information, caused, in particular, by poor knowledge of management standards and low use of accounting and financial management tools does not facilitate control of the PEV financing information system.

Use of new information technologies constitutes an opportunity that can permit to create a reliable data base.
However, strengthening of CCIA on all levels and setting up of evaluation, follow-up and resource management control mechanisms can guarantee the optimal use of these resources.
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2.8. Management - Development of Skills

In the domain of planning, many health care sector plans and plans specific for PEV have been developed. They include the 2003-2007 five-year strategic PEV plan, measles control plan, MNT elimination plan, national injection safety plan and various district vaccination micro plans. Efforts have been undertaken to ensure a broader integration of PEV into various national plans, such as PNDS II and DRSP, which is being finalized.

In the area of strengthening of technical skills of PEV managers in the field of management, some PEV managers on the central level and in some districts have been trained in the management of PEV, cold chain and waste management.

However, apart from the insufficiency of staff trained in management, we note that vaccination center agents have not been trained at the plant training sessions in day to day PEV management.

The consequences of this management skills development and day to day PEV management insufficiency are:

- Insufficient initiatives to create a framework and mechanism of dynamic and efficient partnership, promoting PEV on the regional and district levels;
- Insufficient mobilization of local resources by decentralized health care managers among collectivities, private sector and NGOs;
- A poor capacity of rational management of resources made available to the regions and districts in order to perform the program activities by the Government, development partners and communities through COGES;
- An insufficient link between the vaccination center managers and the communities, which does not favor their massive participation in the routine vaccination activities.

2.9. Summary of Strengths, Weaknesses, Opportunities and Threats (FFOM)

To end the analysis of the situation, we performed a summary of the main strengths, weaknesses, opportunities and threats by component. The following components have been included in this FFOM analysis:

i) Providing of services;
ii) Integrated epidemiological monitoring;
iii) Logistics(cold chain, transport, distribution, etc.);
iv) Communication;
v) Financial stability and
vi) Integration with other activities.

The main strengths, weaknesses, opportunities and threats are summarized in Tables 20 and 21 below.

2.10.1. Internal Environment

Table number 20: Strengths and Weaknesses of the Expanded Program on Immunization.

STRENGTHS	WEAKNESSES
1. PROGRAM MANAGEMENT	
• Priority granted to PEV by the Government in its strategy of reduction of infant mortality, contained in PNDS 2006-2015; • Existence of the functional PEV inter-agency coordination committee (CCIA); • Existence of the PEV Technical Support Committee; • Conversion of the PEV service into a department since 2005 and its functionality since 2006; • Existence of a PEV team on regional and district levels; • Good cooperation between the Ministry of Public Health and Population, Ministry of Finances and Budget, Ministry of Economy, Planning and International Cooperation and development partners (WHO and UNICEF)	• Quantitative insufficiency of the health care staff, involved in PEV; • Poor distribution of the existing staff • Health care staff instability • Insufficient technical capacities of PEV employees on all levels in terms of planning, management, follow-up and evaluation of activities • Lack of integration of various existing documents, policies, norms and standards (strengthening of capacities is required for the management) • Low routine data completeness and promptness rates • Poor analysis and local use of routine data • Absence of actual operation of PEV vaccine and medications national regulation authorities (supply of vaccines) • Insufficient quality of vaccine data
2. PROVIDING OF SERVICES	
• Existence of a vaccination schedule; • Preparation of a satisfactory DQA in 2004, which shows reliability of the PEV routine data management (administered doses); • Increase of the measles immunization coverage rate thanks to organization of a mass campaign in two phases (October 2005 and January 2006); • Inclusion of administration of Vitamin A supplements in the routine PEV; • Organization of a routine immunization accelerated campaign with integration of Vitamin A, parasite treatment of children with Mebendazole, and distribution of MII in 2006	• Poor geographic coverage of the vaccination centers; • Poor integration rate of vaccination in the health care structures; • Lack of effectiveness of "ACD" approach to reach target groups in difficult access areas; • Insufficient use continuity and low capacity of PEV services to administer multi-dose vaccines(DTC 1 –DTC3 drop out rate =16%); • Non-availability of health cards for women and children • Qualitative and quantitative insufficiency of health care staff • Insufficient training, supervision and monitoring • Lack of motivation among the staff, caused by irregular payment of salaries and poor working conditions • Irregularity of immunization sessions;
3. INTEGRATED EPIDEMIOLOGICAL MONITORING OF DISEASES	
• Interruption OF CIRCULATION OF PVS; • Existence of a performing and decentralized monitoring system (AFP, measles, yellow fever and MNT) • Existence of an epidemics response plan; • Training of the staff in monitoring; • Existence of the reference laboratory in the country (Institut Pasteur of Bangui); • Existence of means of transportation (motorcycles) • Existence of CNC and CNEP	• Low rate of promptness and completeness of the routine system reports; • Insufficient MAPI monitoring; • Insufficient local use of data; • Insufficient feedback at all levels; • Insufficiency of data transmission channels; • Insufficiency of computer tools on the intermediate and peripheral level; • Insufficiency of monitoring data management of the central level.

STRENGTHS	WEAKNESSES
4. LOGISTICS	
4.1. Cold chain	
• Existence of a new cold room with a sufficient vaccine storage capacity; • Recent upgrading of the cold chain equipment thanks to the support of UNICEF, WHO, CICR and EU, which permitted to have a good cold chain coverage (95%); • Updating of equipment data in 2006 (refrigerators, freezers, ice rooms, vaccine holders) and updating of the cold chain capacity on the national, regional, district and vaccination center level; • Existence of certain dynamic and functional COGES, which buy fuel and cold chain accessories; • Computerization of the vaccine management tools on the central level	• Absence of an independent and reliable national system of supply of fuel and cold chain accessories; • Existence of numerous vaccination centers with problems in renewal of stock of fuel and cold chain accessories; • Insufficient maintenance of cold chain equipment; • Non-adaptation of refrigerators and freezers for isolated areas, which must be equipped with devices running on solar power; • Insufficient technical skills of agents to perform preventive maintenance of the cold chain equipment; • Absence of cold chain maintenance officers in the health care regions and districts.
4.2. Supply of high quality vaccines and injection safety equipment	
• Regular supply of vaccines to the country by UNICEF and GAVI, including rarely used vaccines (yellow fever); • Training of a national logistics expert and vaccine computerized management supply director; • Existence of a vaccine loss reduction plan document; • Existence of injection safety policy; • Regular supply of safety equipment during the period 2003 - 2006 to the country by GAVI; • Availability of injection safety equipment in all vaccination centers.	• Absence of an independent national system of supply in vaccines and injection safety equipment; • Insufficient management of vaccine stock and injection safety equipment in the districts and vaccination centers; • Not respecting of the vaccine supply schedule on the intermediate and peripheral levels; • Insufficiency of staff, trained in the management of vaccines and injection safety equipment.
4.3. management of biomedical waste	
• Existence of a national equipped focal point;	• Absence of biomedical waste management document; • Absence of adequate incinerators in the districts.
4.4. Transport and Communication Equipment	
• Improvement of the PEV motor vehicle fleet by 7 new vehicles for the PEV management, health care prefectures of Ouham, Ouham-Pendé, Nana-Mambéré and national inspection of mobile health care services by UNICEF; • Equipping of all PEV managers on regional and district levels with DT 100 and AG 125 motorcycles by UNICEF and WHO;	• Obsolete and insufficient radio equipment; • Insufficient vehicle fleet (4 x4 vehicles, motorcycles, bicycles) in the majority of districts and vaccination centers for transport of supplies, supervision, monitoring and vaccination of populations of difficult access areas.
5. Advertising and Communication	
• IEC service, converted into a department of health communication; • Existence of a strategic orientation; • Good involvement of community leaders and animators in the additional immunization activities; • Actual involvement of public and private media in social mobilization during AVS	• Lack of modern production and reproduction units for educational and sensitizing materials within the Health Promotion Department; • Insufficiency of technical, managerial and material skills in terms of communication for change of behavior on all levels; • Poor involvement of opinion leaders, politicians and communities; • Poor involvement of mass media (public and private) in routine PEV; • Insufficient involvement of leaders and animators in the routine PEV activities; • Poor capacity of communication in favor of the routine PEV;

STRENGTHS	WEAKNESSES
	• Insufficiency of educational materials; • Insufficiency of recent data on the reasons for non-vaccination of children or missed opportunities of the routine PEV;
6. Financial Stability	
• Presence of development partners, such as WHO, UNICEF, ROTARY, GAVI; • Community financing initiative through the cost coverage system; • A budget line for PEV was introduced to the state budget.	• Insufficient allocation and disbursement of financial resources by the government for purchase of equipment and day-to-day PEV operations (purchase of fuel and cold chain accessories), in view of cash flow difficulties; • Poor financial capacity of COGES to ensure purchase of fuel for the PEV activities; • A limited number of development partners, supporting the routine PEV; • Absence of financing for construction of incinerators for management of biomedical waste.

2.10.2. External Environment

Table number 21: Opportunities and Threats for Expanded Program on Immunization.

OPPORTUNITES	THREATS
• Political commitment at the highest level; • Good participation of the population in the PEV activities; • Gradual resuming of bi- and multi-lateral cooperation.	• Poor state of the internal road network; • Persisting insecurity within the country; • Cross-border insecurity; • Lack of regular payment of salaries; • Poor geographic coverage in fuel stations; • Cash flow difficulties; • Temporary suspension of hiring of staff to the public service; • Circulation of PVS in sub-regions; • Burden of external and internal debt of the State (80% of GDP)

3. NATIONAL PRIORITES

As a result of analysis of the situation, the main problems and priorities of PPAC 2007 – 2011 of the Central African Republic are summarized in the following Table 22:

Table 22: Priority Problems.

CATEGORIES	PROBLEMS
PROVIDING OF SERVICES AND PROGRAM MANAGEMENT	The national immunization coverage has improved for all antigens, but still remains fragile (except for VAT2+ , which remains insufficient)
	A high DTC1-DTC3 drop-out rate
	High vaccine loss rates
	"Reach Each District" strategy is not effective yet in the routine application;
	Poor technical skills in PEV management
	Insufficient quality of vaccine data
EPIDEMIOLOGICAL MONITORING	Insufficient MAPI monitoring
	Hepatitis B endemic area
	High number of Hib infections (IRA and meningitis)
LOGISTICS	Absence of the national policy regarding maintenance, cold chain and transport
	Cold chain problems, caused by irregular supply of fuel and accessories
	Absence of appropriate incinerators in the districts
	Insufficiency of radio equipment for transmission of data
FINANCIAL STABILITY	Insufficient allocation of financial resources of the state for purchase of vaccines, other consumables and PEV equipment
	Absence of immunization independence
	Quantitative insufficiency of human resources
	Poor financial capacity of COGES to ensure the functioning of PEV centers;
INFORMATION AND COMMUNICATION	Limited access of families and communities to PEV information

4. VISION, NATIONAL OBJECTIVES AND STAGES

4.1. Vision of the Complete Multi-Annual Plan (PPAC) 2007-2011

In accordance with the Vaccination World Strategy Vision (GIVS) and Millennium Development Objectives, within the 2011 horizon, all vulnerable groups, which means women and children, are vaccinated against PEV target diseases, not exclusively with traditional antigens, but also with new vaccines, regardless of their location and social status. They receive all integrated disease prevention care (malaria, anemia and malnutrition) and the promotion of their health in a strengthened, performing health care system is ensured by increasing and efficient participation of the government and communities.

This vision is also inspired by the Strategic Framework of Fight Against Poverty. Its health care aspect is a part of the National health Care Development Plan for 2006 – 2015.

To that effect, the Government is committed to:

i) Conducting unprecedented actions in order to reach difficult access areas;
ii) Including all health care interventions that have a real impact on reduction of morbidity and mortality of children;
iii) Use local and external potential in order to improve the program's efficiency;
iv) Extend immunization beyond infants to be able to take into account other categories of vulnerable populations;
v) Introduce new vaccines against hepatitis B, Haemophilus influenzae which constitute the real problems of public health in CAR.

4.2. General Objective

Contribute to reduction of morbidity and mortality caused by diseases that can be prevented through immunization

4.3. National and Stage Objectives

Table number 21: National and stage objectives of PPAC2007-2011.

Global objectives	Specific objectives	Stages				
		2007	2008	2009	2010	2011
Reach an immunization coverage rate for all antigens of at least 90% on the national level by 2010	By 2011, reach an immunization coverage rate of: - BCG: 90%	85%	87%	89%	90%	90%
	- VPO3: 90%	80%	82%	85%	90%	90%
	- DTC3: 90%	80%	82%	85%	90%	90%
	- VAR: 90%	80%	82%	85%	90%	90%
	- VAA: 90%	80%	82%	85%	90%	90%
	- VAT2+: 90%	50%	70%	85%	90%	90%
	- HepB3.: 90%		82%	85%	90%	90%
	- Hib3: 90%		82%	85%	90%	90%

Global and regional objectives	**Specific objectives**	**Stages**				
1. By 2010, 100% of districts will reach at least 80% immunization coverage for all antigens.	By 2011, 100% of districts will reach at least 80% immunization coverage for all antigens	2007: At least 70% of districts will reach at least 80% immunization coverage rate for all antigens 2008: At least 85% of districts will reach at least 80% immunization coverage rate for all antigens 2009: At least 90% of districts will reach at least 80% immunization coverage rate for all antigens 2010: At least 95% of districts will reach at least 80% immunization coverage rate for all antigens 2011: 100% of districts will reach at least 80% immunization coverage rate for all antigens				
	Provide sufficient quantity and quality of staff for all PEV services by 2011	2007: Equip 60% of PEV services in qualified staff 2008: Equip 80% of PEV services in qualified staff 2009 Equip 90% of PEV services in qualified staff 2010 Equip 95 % of PEV services in qualified staff 2011: Equip 100% of PEV services in qualified staff				
	Equip 100% of health care districts in appropriate vehicles by 2011	2007: Equip 60% of health care districts in appropriate vehicle fleet 2008: Equip 70% of health care districts in appropriate vehicle fleet 2009: Equip 80% of health care districts in appropriate vehicle fleet 2010: Equip 90 % of health care districts in appropriate vehicle fleet 2011: Equip 100% of health care districts in appropriate vehicle fleet				
	Ensure 100% equipment maintenance by 2011	2007: Develop a national policy and ensure equipment maintenance in 60% 2008: Ensure equipment maintenance in 80% 2009: Ensure equipment maintenance in 90% 2010: Ensure equipment maintenance in 95% 2011 Ensure equipment maintenance in 100%				
2. Reduce the DTC1-DTC3 drop out rate to less than 10%	Reduce the DTC1-DTC3 drop out rate to less than 10% by the end of 2011	2007: DTC1-DTC3 drop-out rate of 14% 2008: DTC1-DTC3 drop-out rate of 12% 2009: DTC1-DTC3 drop-out rate of 10% 2010: DTC1-DTC3 drop-out rate of 8% 2011DTC1-DTC3 drop-out rate of 6%				
3. Reduce the loss rate of all antigens according to the recommended norms	By 2011, reduce the antigen loss rate:	2007	2008	2009	2010	2011
	BCG: from 35% to 15%	30%	25%	20%	15%	15%
	DTC: from 24% to 5%	20%	15%	10%	5%	5%

Global and regional objectives	**Specific objectives**	**Stages**				
	VPO: from 27% to 5%	20%	15%	10%	5%	5%
	VAR: from 24% to 15%	22%	20%	18%	15%	15%
	VAA: from 38% to 15%	33%	28%	20%	15%	15%
	VAT: from 8% to 5%	7%	6%	5%	5%	5%
	HepB: to 5%		15%	10%	5%	5%
	Hib: to 5%		15%	10%	5%	5%
4. Eradicate Polio, eliminate MNT, yellow fever and measles	Maintain the reduction of polio transmission until declaration of eradication of this disease in 2011	From 2007 to 2011: Isolate all cases of PVS				
	Eliminate MNT by 2011	From 2007 to 2011: Reach a real rate of MNT < 1 case per 1,000 LB per year and per district				
	Reduce mortality caused by measles by 95% by 2011	From 2007 to 2008: reach 80% reduction of mortality caused by measles From 2009 to 2011: reach 95% reduction of mortality caused by measles				
	Eliminate yellow fever by 2011	From 2007 to 2011: Eliminate yellow fever				
5. Ensure stability of immunization financing	Increase national financing for immunization by 10% per year.	2007: 10% of State resources except for salaries in comparison with 2006. 2008: 10% of State resources except for salaries in comparison with 2007. 2009: 10% of State resources except for salaries in comparison with 2008. 2010: 10% of State resources except for salaries in comparison with 2009. 2011: 10% of State resources except for salaries in comparison with 2009				

5. STRATEGIES AND ACTIVITES ACCORDING TO THE OBJECTIVES BY COMPONENT

Table number 22: Strategies and activities of PPAC 2007- 2011 by component.

Objectives	Strategies	Main Activities
1. Reach the immunization coverage level for all antigens of 90% at the national level by 2011, with at least 80% in each district.	Implementation of the ACD strategy in each district. It will permit to address target populations that cannot be reached by fixed vaccination services.	1. Improve advanced strategy vaccination teams
		2. Perform training supervision
		3. Monitor the activities of the vaccination service centers
		4. Organize activity micro-planning workshops
		5. Strengthen the links between the community and health care services
	Strengthening of the health care system.	6. Create PEV extension centers
		7. Upgrade regional and district health care institutions
		8. Equip targeted health care institutions in the regions and health care districts in motor vehicles, computer equipment and incinerators
		9. Equip difficult to access centers in cold chain equipment with solar power supply;
		10. Train – re-train SSP management bodies members
		11. Popularize COGES management tools
		12. Ensure follow-up/ evaluation of activities
	Strengthening of technical capacities	13. Evaluate the training needs in various domains of planning, management, follow-up and evaluation on the level of senior staff of regions and districts, regarding daily PEV practices in vaccination centers (management of vaccines and other consumables, administration of vaccines, preventive cold chain maintenance,. Data management)
		14. Train health care officers
		15. Evaluate the training
	Setting up of a motivation mechanism in order to make the PEV staff more performing	16. Define motivation modalities for the staff showing good performance on all levels
		17. Motivate the staff showing good performance on all levels

Objectives	Strategies	Main Activities
	Development of a regular supply system for the PEV centers in terms of vaccines, injection safety equipment and cold chain accessories	18. Estimate the needs of PEV centers in terms of vaccines, injection safety equipment and cold chain accessories
		19. prepare a plan of upgrading of vaccines, injection safety equipment and cold chain accessories
		20. Regularly re-supply the PEV centers in vaccines and cold chain accessories
	Set up a regular supply system for PEV centers, suffering from fuel shortage	21. Identify PEV centers that have problems
		22. Estimate the fuel needs of these PEV centers
		23. Regularly supply fuel to the problematic PEV centers
	Strengthening of the data management system	24. Evaluate the needs for the proper functioning of the data management system
		25. Develop / adapt the data management tools
	Organization of routine immunization acceleration campaigns	26. develop micro-plans of additional immunization activities
		27. Organize acceleration campaigns
		28. Organize the follow-up and evaluation of activities
	Inclusion of other minimal packages of services in the routine PEV (Vitamin A supplements, distribution of MII, Mebendazole)	29. Organize a consensus workshop regarding the additional interventions
		30. Prepare an integrated plan of distribution of MII, micro nutrients and Mebendazole
		31. Organize the distribution of supplements and micro nutrients
		32. Ensure the distribution of MII Mebendazole
		33. Perform an integrated follow-up of the use of Vitamin A, du Mebendazole and MII simultaneously with the routing vaccination.
		34. Cooperate with other services in terms of planning (Malaria, PCIME, SR, Nutrition)
	Strengthening of communication capacities of the staff and community animators	35. Train / Re-train PEV officers in communication on all levels
		36. Train/ re-train native animators in communication techniques
		37. Train media communicators in PEV communication techniques
		38. Equip production and reproduction units in supplies (equipment and consumables for production of supports);
		39. Equip DCS and officers with vehicles on all levels
		40. Equip PEV centers in PEV educational materials
	Social mobilization in favor of PEV	41. Update the integrated PEV, PCIME communication plan;
		42. Prepare and broadcast radio and TV programs, promoting PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)
		43. Prepare and broadcast radio and TV micro-programs, promoting PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)
		44. Organize radio and TV discussions, regarding PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)

Objectives	Strategies	Main Activities
		45. Organize public programs in favor of PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)
		46. Publish information on PEV (routine PEV, new vaccines, AVS, monitoring, MAPI) in press
		47. Produce a periodical bulletin on PEV activities (routine PEV, new vaccines, AVS, monitoring, MAPI)
		48. Use theatre performers to distribute information, regarding PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)
		49. Use traditional dancing groups to distribute information, regarding PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)
		50. Organize educative programs in communities and FOSA
		51. prepare and broadcast a documentary film on PEV activities (routine PEV, new vaccines, AVS, monitoring, MAPI)
	Follow-up and evaluation of communication activities	52. Organize a CAP survey on PEV 53.
		54. Ensure supervision of PEV communication
	Effective introduction of vaccines against hepatitis B and Haemophilus influenzae of type B in the routing PEV	55. Perform an evaluation of needs (cold chain, vaccines, etc.) before the introduction of HepB and Hib vaccines in the routine PEV
		56. Prepare an action plan for introduction of vaccines against Hepatitis B and Haemophilus influenzae type b in the routine PEV
		57. Adapt the current vaccination schedule and the management tools
		58. develop a training module regarding the introduction of HepB and HiB;
		59. Train officers, involved in the management of HepB and Hib vaccines in the targeted districts
		60. Order vaccines and other supplies in 2007
		61. Supply PEV centers in HepB and Hib vaccines
		62. Sensitize health care officers and population regarding the introduction of vaccines against Hepatitis B and haemophilus influenzae of type b in the routine PEV
		63. Start vaccination in the targeted districts in 2008
		64. Ensure supervision and monitoring of activities of vaccination against HepB and Hib in the target districts
		65. Evaluate the implementation of the introduction of HepB and Hib vaccines
		66. Extend the vaccination to other districts

Objectives	Strategies	Main Activities
	Strengthening of the PEV logistic management	67. Develop a national maintenance policy
		68. Create maintenance structures / units in the seven (7) regional bases and twenty four (24) districts
		69. Train / re-train officers in proper maintenance and use of the cold chain equipment
		70. Train / re-train drivers in proper maintenance and use of motor vehicles
		71. Make a request to UCM, COGES and development partners to set up a stable system of supply of vaccination centers in fuel and cold chain accessories
	Strengthening of the qualified staff	72. Re-examine human resources needs
		73. Develop a human resources plan
		74. Re-deploy the existing staff
		75. Make a request to the government to hire health care staff
2.. Reduce the DTC1-DTC3 drop-out rate to less than 10% by the end of 2011	Setting up of drop-outs locating mechanism	76. Develop the tools
		77. Train the staff
		78. Make an active search for drop-outs
3. Reduce the loss rate of all antigens according to the recommended norms by 2011	Strengthening of the management system for vaccines and other supplies (SAB, SAD, diluents, B.S, fuel and cold chain accessories)	79. Train/ re-train managers of central and regional warehouses and ECD members in computerized management of vaccines
		80. Train officers of vaccination centers in management of vaccines and other supplies
		81. Adapt the vaccine loss rate reduction plan, taking new vaccines into account
		82. Popularize the vaccine loss rate reduction plan
		83. Popularize the open bottle policy
		84. Organize the follow-up and evaluation
		85. Ensure regular preventive maintenance of the cold chain
		86. Equip health care districts in computer tools for management of vaccines
		87. Adapt the management tools to introduction of new vaccines
		88. Monitor vaccine losses
4. Eradicate polio,	Organization of AVS (JNV, JLV, Riposte)	89. Elaborate micro-plans in the target districts
		90. Organize mass campaigns (JNV and JLV polio) if needed
		91.
	Strengthening of monitoring based on AFP cases,	
		92. Prepare AFP monitoring plans on the district level
		93. Organize regular visits to the monitoring sites

Objectives	Strategies	Main Activities
		94. Report all suspected cases of AFP
		95. Investigate all reported suspected cases of AFP
		96. Monitor AFP case monitoring performance indicators
		97. Financially and materially support the functioning of various committees (CNEP, CNC, confinement)
5. Eliminate MNT	Promotion of birthing hygiene for prevention of MNT	98. provide equipment and consumables to the Institut Pasteur of Bangui
	Organization of AVS	99. Sensitize health care workers and birth attendants regarding birthing hygiene
		100. Develop micro-plans in the target districts
		101. Train health care workers
	Strengthening of monitoring, based on MNT cases	102. Organize mass campaigns against MNT
		103. Develop MNT case monitoring plans on the district level
		104. Train health care workers
		105. Organize supervision of trained workers
		106. Organize regular visits to the monitoring sites
		107. Report any suspected case of MNT
		108. Investigate all reported suspected cases of MNT
6. Control Yellow Fever	Organization of AVS	109. Follow MNT case monitoring performance indicators
		110. Prepare micro plans in the target districts
		111. Train health care workers
	Strengthening of monitoring, based on yellow fever cases	112. Organize mass campaigns
		113. Prepare yellow fever case monitoring plans on the district level
		114. Train health care workers
		115. Organize supervision of trained workers
		116. Organize regular visits to the monitoring sites
		117. Report any suspected case of yellow fever
		118. Investigate all reported suspected cases of yellow fever
		119. Follow the yellow fever case monitoring performance indicators
7. Control Measles	Organization of AVS	120. Provide equipment and consumables to Institut Pasteur of Bangui

Objectives	Strategies	Main Activities
		121. Develop micro plans in the target districts
		122. Train health care workers
	Strengthening of monitoring, based on measles cases	123. Organize mass campaigns
		124. prepare measles case monitoring plans on the district level
		125. Organize regular visits to the monitoring sites
		126. report any suspected case of measles
		127. Investigate any reported suspected case of measles
		128. Follow measles case monitoring performance indicators
	Correct management of measles cases.	129. Supply the Institut Pasteur of Bangui with equipment and consumables
	Strengthening of integrated epidemiological monitoring of the disease	130. Train the officers, involved in the management of measles cases
		131. Adapt monitoring tools to introduction of new vaccines (Hep B and Hib);
		132. Popularize a flow chart emphasizing the association of Vitamin A with the treatment
		133. Train epidemiological monitoring officers
		134. Make data collection support available
		135. Strengthen data transmission channels
		136. Produce a feedback bulletin for health care workers
	Setting up of a correct MAPI management system	137. Perform the follow-up and evaluation of monitoring activities
		138. Update the MAPI management guide 139. Train health care workers in correct MAPI management 140. Report all cases of MAPI
8. Increase the national financing for vaccination by 10% per year	Developing of a mechanism, ensuring stable Government financing of PEV	141. Investigate the MAPI
		142. Send an information note to the President of the Republic in favor of immunization independence

Objectives	Strategies	Main Activities
		143. Prepare a communication to the National Assembly to sensitize the members of Parliament regarding the immunization independence
	Integration of planning in the budget preparation process on the national level	144. Send a communication to the Council of Ministers asking for effective PEV management by the State
		145. In cooperation with the Ministries of Planning and Finances, develop a new approach to actual allocation of funds to PEV
		146. Prepare a financing plan.
		147. Develop managerial capacities of the staff of the Ministries of Health, Planning and Finances regarding the financial management of PEV
		148. Ensure the follow-up of PEV financing by CCIA
		149. Set up an audit committee within CCIA and define its functioning modalities
		150. Conduct audits of PEV activities
	Development of an active partnership with the local collectivities, private enterprises and NGO	151. Prepare quarterly financial reports, sending copies to CCIA and GAVI 152. Involve the private health care sector and NGOs in financing of immunization.

6. SCHEDULE OF MAIN ACTIVITES

Table number 23: Schedule of PPAC 2007 -2011 Activities

MAIN ACTIVITIES	2007	2008	2009	2010	2011
A. PROVIDING OF SERVICES					
1. Improve advanced strategy for the vaccination teams	X	X	X	X	X
2. Provide training supervision	X	X	X	X	X
3. Monitor the activities of vaccination service centers	X	X	X	X	X
4. Strengthen the links between the community and health care services	x	x	x	x	x
5. Organize activity micro-planning workshops	X	X	X	X	X
6. Create PEV extension centers	X	X	X	X	X
7. Upgrade health care institutions of regions and districts	X	X	X	X	X
8. Equip targeted health care institutions of regions and districts with motor vehicles, computer equipment and incinerators	X	X	X	X	X
9. Equip centers with difficult access with cold chain equipment powered with solar energy	X	X	X		
10. Train/ re-train members of SSP management bodies	X	X	X	X	X
11. Popularize COGES management tools	X	X	X		
12. Ensure follow up/ evaluation of activities	X	X	X	X	X
13. Evaluate the training needs in various domains of planning, management, follow-up and evaluation in terms of the senior staff of regions and districts in daily PEV practices, adopted in vaccination centers (management of vaccines and other consumables, administration of vaccines, preventive maintenance of the cold chain, data management, etc.)	X	X			
14. Train health care workers	X	X	X	X	X
15. Evaluate the training	X	X	X	X	X
16. Define the modalities for motivation of staff who showed good performance on all levels	X	X			
17. Motivate staff who showed good performance on all levels	X	X	X	X	X

MAIN ACTIVITIES	2007	2008	2009	2010	2011
18. Estimate the needs of PEV centers in terms of vaccines, injection safety equipment and cold chain accessories	X	X	X	X	X
19. Develop the update plan for vaccines, injection safety equipment and cold chain accessories	X	X	X	X	X
20. Regularly supply PEV centers with vaccines and cold chain accessories	X	X	X	X	X
21. Identify problematic PEV centers	X		X		X
22. Estimate the needs of these PEV centers in terms of fuel	X		X		X
23. Regularly supply PEV centers affected by the fuel problem	X	X	X	X	X
24. Evaluate the needs for proper functioning of the data management system	X	X	X	X	X
25. Develop/ adapt data management tools	X		X		X
26. develop micro-plans for additional immunization activities	X	X	X		
27. organize the follow-up and evaluation of activities	X	X	X	X	X
28. prepare an integrated plan of distribution of MII, micro nutrients and Mebendazole.	X	X	X	X	X
29. Organize distribution of supplements and micro-nutrients	X	X	X	X	X
30. Organize a consensus workshop regarding the interventions to be added	X	X			
31. Ensure distribution of MII and of Mebendazole	X	X	X	X	X
32. Perform an integrated follow-up of use of Vitamin A, Mebendazole and MII simultaneously with the routine vaccination	X	X	X	X	X
33. Cooperate with other services in the planning (malaria, PCIME, SR, nutrition, etc.)	X	X	X	X	X
Develop a national maintenance policy 34. Create maintenance structures / units in the seven (7) regional bases and twenty four (24) districts	X	X	X	X	X
35. Train / re-train officers in maintenance and proper use of the cold chain equipment	X	X	X	X	X
36. Train / re-train the drivers in maintenance and proper use of motor vehicles and in first aid	X	X	X	X	X
37. Re-examine the human resources needs	X	X	X		
38. Prepare a hiring plan	X	X	X	X	X
39. Re-deploy the existing staff	X	X	X	X	X

MAIN ACTIVITIES	2007	2008	2009	2010	2011
B. COMMUNICATION IJN FAVOR OF PEV					
40. Train / re-train PEV workers in communication on all levels	X	X	X	X	X
41. Train / re-train native animators in communication techniques	X	X	X	X	X
42. Train media communicators in PEV communication techniques	X	X	X	X	X
43. Equip production and reproduction units with supplies (equipment and consumables for production of supports);	X	X	X	X	X
44. Equip DCS and workers with motor vehicles on all levels	X	X	X	X	X
45. Equip PEV centers with PEV educational materials	X	X	X	X	X
46. Update the integrated PEV, PCIME communication plan;	X	X	X	X	X
47. Prepare and broadcast radio and TV programs in favor of PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
48. Prepare and broadcast micro-programs of the radio and TV in favor of PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
49. Organize radio and TV discussions regarding PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
50. Organize public broadcasts regarding PEV (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
51. Publish information regarding PEV in press (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
52. Produce a periodical bulletin, devoted to PEV activities (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
53. Use theatre performers to distribute PEV information (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
54. Use traditional dancing groups to distribute PEV information (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X
55. Organize educational sessions in communities and FOSA	X	X	X	X	X
56. Prepare and broadcast a documentary film regarding PEV activities (routine PEV, new vaccines, AVS, monitoring, MAPI)	X	X	X	X	X

MAIN ACTIVITIES	2007	2008	2009	2010	2011
57. Organize a CAP survey on PEV		X			X
58. Ensure PEV communication supervision	X	X	X	X	X
C. REDUCTION OF DROP-OUT RATE					
59. Develop tools to locate drop-outs	X				
60. Train the staff	X	X	X	X	X
61. Actively look for drop-outs	X	X	X	X	X
D. REDUCTION OF VACCINE LOSS RATES					
62. Train / re-train managers of central and regional warehouses and ECD members in computerized vaccine management	X	X	X	X	X
63. Train employees of vaccination centers in management of vaccines and other supplies	X	X	X	X	X
64. Adapt the vaccine loss rate reduction plan, taking into account new vaccines	X	X			
65. Distribute the vaccine loss rate reduction plan	X	X	X	X	X
66. Popularize the open bottle policy	X	X	X	X	X
67. Organize follow-up and evaluation	X	X	X	X	X
68. Ensure regular preventive maintenance of the cold chain	X	X	X	X	X
69. Equip health care districts with computer tools for vaccine management	X	X	X	X	X
70. Monitor vaccine losses	X	X	X	X	X
71. Adapt management tools to new vaccines					
E. ERADICATION OF POLIO					
72. Elaborate micro plans in the target districts	X	X	X	X	X
73. Train health care agents	X	X	X	X	X
74. Organize mass campaigns (JNV and JLV Polio) if needed	X	X	X		
75. Update the response plan according to the epidemiologic context	X	X	X	X	X
76. Develop the AFP case monitoring plans on the district level	X	X	X	X	X
77. Organize regular visits to monitoring sites	X	X	X	X	X

MAIN ACTIVITIES	2007	2008	2009	2010	2011
78. Report all suspected AFP cases	X	X	X	X	X
79. Investigate any reported suspected case of AFP	X	X	X	X	X
80. Follow AFP case monitoring performance indicators	X	X	X	X	X
81. Supply equipment and consumables to the Institut Pasteur of Bangui	X	X	X	X	X
82. Financially and materially support the functioning of various committees (CNEP, CNC, Confinement, etc.)	X	X	X	X	X
F. ELIMINATION OF MNT					
83. Prepare micro-plans in the target districts	X				
84. Train health care workers	X				
85. Sensitize health care workers and birth attendants in birthing hygiene	X	X	X	X	X
86. Organize supervision of trained employees	X	X	X	X	X
87. Organize mass campaigns	X	X			
88. Develop MNT monitoring plans on the district level	X	X	X	X	X
89. Organize regular visits to the monitoring sites	X	X	X	X	X
90. Report all suspected cases of MNT	X	X	X	X	X
91. Investigate all reported suspected cases of MNT	X	X	X	X	X
92. Follow MNT case monitoring performance indicators	X	X	X	X	X
G. CONTROLE OF YELLOW FEVER					
93. Prepare micro-plans in the target districts	X	X	X	X	X
94. Train health care workers	X	X	X	X	X
95. Organize mass campaigns	X	X	X	X	X
96. Organize regular visits to the monitoring sites	X	X	X	X	X
97. Report any suspected case of Yellow Fever	X	X	X	X	X
98. Investigate any reported suspected case of Yellow Fever	X	X	X	X	X
99. Follow the Yellow Fever case monitoring performance indicators	X	X	X	X	X
100. Prepare Yellow Fever case monitoring plans on the district level	X	X	X	X	X
101. Supply Institut Pasteur of Bangui with equipment and consumables	X	X	X	X	X
H. CONTROL OF MEASLES					

MAIN ACTIVITIES	2007	2008	2009	2010	2011
102. Prepare micro-plans in the target districts	X	X	X	X	X
103. Train health care workers	X	X	X	X	X
104. Organize mass campaigns		X			
105. Organize the responses	X	X	X	X	X
106. Prepare measles case monitoring plans on the district level	X	X	X	X	X
107. Organize regular visits to the monitoring sites	X	X	X	X	X
108. Report any suspected case of measles	X	X	X	X	X
109. Investigate any reported suspected case of measles	X	X	X	X	X
110. Follow the measles case monitoring performance indicators	X	X	X	X	X
111. Supply Institut Pasteur of Bangui with equipment and consumables	X	X	X	X	X
112. Train agents, involved in the management of measles cases	X	X	X	X	X
I. INTEGRATED MONITORING OF DISEASES					
113. Adapt the monitoring tools to introduction of new vaccines (Hep B and Hib);	X	X	X	X	X
114. Popularize the flow chart, emphasizing the association of Vitamin A with the treatment	X	X	X	X	X
115. Train agents in epidemiological monitoring	X	X	X	X	X
116. Make data collection supports available	X				
117. Strengthen data transmission channels	X		X		X
118. Prepare and publish a feedback bulletin for health care workers	X	X	X	X	X
119. Prepare the follow-up and evaluation of the monitoring activities	X	X	X	X	X
120. Update the MAPI management guide	X	X	X	X	X
121. Train health care workers in correct MAPI management 122. Report all cases of MAPI 123. Investigate the MAPI	X	X	X	X	X
124. Adapt the monitoring tools to introduction of new vaccines (Hep B and Hib);	X				
125. Popularize the flow chart, emphasizing the association of Vitamin A with the treatment	X	X	X	X	X
126. Train agents in epidemiological monitoring	X	X	X	X	X
127. Make data collection supports available	X			X	

MAIN ACTIVITIES	2007	2008	2009	2010	2011
128. Strengthen data transmission channels		X	X		
129. Prepare and publish a feedback bulletin for health care workers	X	X	X	X	X
J. FINANCEMENT, INFORMATION AND PROGRAM MANAGEMENT					
130. Send an information note to the President of the Republic in favor of the immunization independence	X				
131. Send a communication to the National Assembly to sensitize the members of Parliament regarding the immunization independence	X	X	X	X	X
132. Send a communication to the Council of Ministers for effective management of PEV by the state;	X		X		X
133. In cooperation with the Ministries of Planning and Finances, develop a new approach of effective allocation of credits in favor of PEV	X	X	X	X	X
134. Prepare a financing plan	X				
135. Develop managerial capacities of the staff of the Ministries of Health, Planning and Finances regarding financial management of PEV.	X	X	X	X	X
136. Assure the follow-up of PEV financing by CCIA	X	X	X	X	X
137. Set up an audit committee within CCIA and define its functioning modalities	X		X		X
138. Conduct audits of PEV activities	X	X	X	X	X
139. prepare quarterly financial reports sending copies to CCIA and GAVI	X	X	X	X	X
140. Involve the private health care sector and NGO in financing of immunization;	X	X	X	X	X
141. Ask U.C.M., COGES and development partners to set up the reliable system supplying vaccination centers in fuel and cold chain accessories	X	X	X	X	X
142. Ask the Government to recruit more health care workers	X	X			
143. Send an information note to the President of the Republic in favor of the immunization independence	X				

7. ANALYSIS OF THE COSTS AND FINANCING OF THE PROGRAM

7.1. Methodology

The program financing costs analysis has been performed in two stages:

- The first one consisted in collection of data regarding recurrent costs, capital costs and shared costs, distributed on all levels of the health care system. The usual partners of the Program have been contacted to collect, verify and validate the data provided. A documentary review in various ministerial departments such as the Ministry of Finances and Budget, Ministry of Planning and Economy and of International Cooperation permitted to compile this data;

  Four document preparation workshops have been organized in Boali with participation of the senior staff of the Ministerial Departments of Public Health and Population from all levels of the health care pyramid, Finances and Budget, Economy and Planning and International Cooperation, and representatives of development partners, such as WHO and UNICEF. The PPAC draft has been prepared during these meetings. The program financing and cost analysis tools, made available to the country by GAVI, has been used for estimation of costs, .

- The second stage consisted in finalizing of the document by the PEV Technical Support Committee (CTAPEV), a technical body of the PEV Inter-Agency Coordination Committee (CCIA) with a strong participation of the staff of the Ministry of Finances and Budget, Ministry of Planning and Economy and of International Cooperation. A meeting of the PEV CCIA Committee, with participation of the Minister of Finances and Budget, validated the data regarding the past and future costs.

7.2. Quantitative Data Regarding the Costs for The Reference Year (2005)

7.2.1. Basic Indicators for the Reference Year

According to the following Table number 24, the total cost of the program was $10,058,185 US, including 69% for the vaccination costs and 31% for shared costs for the year 2005. The costs of vaccination campaigns represented 36% of the total program cost and 52% of all vaccination costs.

Table number 24 : Basic Indicators for the Reference Year (2005)

Indicateur pour l'Année de Référence	2005
Dépenses Total en Vaccination	$6 925 863
Campagnes de vaccination	$3 610 134
Vaccination de routine	$3 315 729
par habitant	$0,8
par enfant DTC3	$56,8
% vaccine et matériel d'injection	9,6%
% financement nationale	25,2%
% dépenses totales de santé	0,0%
% dépenses totales de santé du gouv.	1,4%
% PIB	0,24%
Total des coûts partagés	$3 132 322
% des coûts partagés dans le total	31%
TOTAL	$10 058 185

This high proportion of campaign costs in comparison with routine vaccination can be explained by organization of five rounds of AVS Polio and measles catch-up campaign.

The cost of routine vaccination has been estimated at $0.8 USD per inhabitant, which is equivalent to 0.24% of the GDB for the same year. The cost per child vaccinated with three doses of

DTC is $56.8 USD.

7.2.2. Detailed Cost of the Program

The main financial data is summarized in the following table number 25 by expense category.

Table number 25: Detailed costs of PEV in 2005

	2005
	US$
Vaccins	$237 549
- Vaccins traditionnels	$149 637
- Vaccins nouveaux et sous-utilisés	$87 912
Matériel d'injection	$81 434
Personnel	$1 133 859
- Salaires du personnel employé à temps plein (niveaux central, provincial et loca	$634 437
- Indemnités journalières pour la stratégie avancée/équipes mobiles	$99 184
- Indemnités journalières pour la supervision	$400 239
Transport	$93 710
- Stratégie fixe et livraison des vaccins	$57 761
- Stratégie avancée et mobile	$35 949
Maintenance et frais généraux	$677 843
Chaînes du Froid	$500 554
Autres Équipements	$42 018
Bâtiments	$135 271
Formation à court terme	$121 926
Mobilisation sociale et IEC	$23 548
Contrôle et surveillance des maladies	$162 053
Gestion du programme	$205 338
Autres coûts récurrents	$1 884
Sous Total des Coûts Récurrents	**$2 739 144**
Véhicules	$64 050
Équipement de la Chaîne du froid	$475 526
Autres coûts de capital	$37 008
Sous Total des Coûts en Capital	**$576 585**
Polio	$1 961 567
Vaccins	$481 361
Coûts opérationnels	$1 480 205
Rougeole	$1 648 567
Vaccins et Matériel d'Injection	$583 409
Coûts opérationnels	$1 065 159
Sous Total des Coûts en Campagne	**$3 610 134**
Coûts partagés de personnel	$1 050 206
Coûts partagés de transport	$1 705 350
Bâtiments	$376 766
Subtotal des Coûts Partagés	**$3 132 322**
	$10 058 185
Vaccination de Routine (Stratégie Fixe)	**$6 104 608**
Vaccination de Routine (Stratégie Avancée et Mobile)	**$343 444**
Campagnes de Vaccination	**$3 610 134**

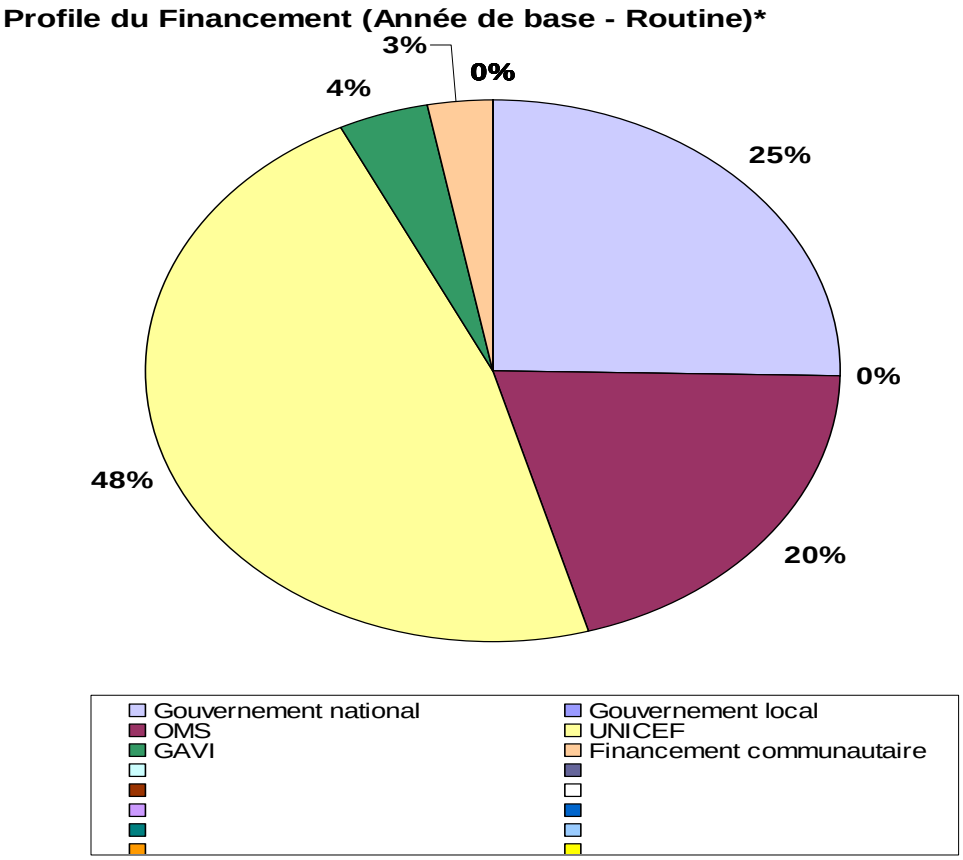
This Table shows that the program costs are distributed as follows: recurrent costs: 27%; capital costs: 6%; campaigns: 36% and shared costs: 31%.

The analysis of costs according to the strategies shows that routine fixed vaccination represents 61% , and advanced and mobile strategies represent 3% and campaigns represent 36%.

7.3. Financing of the Routine PEV for the Reference Year

The program benefited from four main sources of financing, which are: the Government's financing, external resources, collectivities and communities. The following graph presents the contribution of each source of financing in 2005.

Figure 7



In 2005, the PEV financing was provided, respectively, by UNICEF (48%), the Government (25%), WHO (20%), GAVI (4%) and community financing (3%). The UNICEF contribution has been influenced by purchase and upgrading of cold chain equipment, required to organize the measles catch-up vaccination campaign.

The funds form the Central African Government have been devoted essentially to payment of salaries of the staff and cost of use of buildings.

However, it must be noted that in the prefectures that were victims of armed conflicts, humanitarian agencies (MSF, COOPI, religious NGO, etc.) intervened in PEV activities, but it is difficult to appreciate the exact financial value of their interventions.

7.4. Projection of Needs for Resources and Program Financing

7.4.1. Costs and Needs for Future Resources

a) Resource Estimation Methods

The resource estimate takes in consideration:

- The target population, based on 2003 RGPH with a birth rate of 2.5%;
- Immunization coverage objectives to be met each year;
- Introduction of new vaccines and, specifically, the Pentavalent vaccine as of 2008.
- Cost of vaccine doses are the UNICEF reference prices, proposed in the cost and financing analysis tool;

- AVS poliomyelitis planned in for of annual response in case of import
- Vaccination campaign against maternal and neonatal tetanus, planned in three rounds for 2007 and 2008;
- Measles follow-up campaign, scheduled for 2008;
- Mean salary of each category of staff;
- PEV center extension plans for 2007 to 2011;
- PEV logistics upgrading plan for the period 2007-2011;
- Estimate of cost of fuel and other maintenance costs, taking into account the vaccine supply circuit, supervision and advance and mobile strategies;
- Data Quality Audit Report (DQA);
- 2006-2015 National health Care development Plan;
- The draft of the poverty reduction strategy document.

The estimate of financing has been based on combination of data provided by the development partners, Ministry of Public Health and Population, Ministry of Finances and Budget and Ministry of Economy, Planning and International Cooperation. The contribution of the state was estimated according to the previous financing, assuming that the state would continue to pay the salaries and cover the cost of construction and maintenance of health care infrastructure, logistics, and supply of the budget line for vaccines and PEV consumables within the Immunization Independence Initiative.

For the Partners, it was considered that they will continue to support the program through the traditionally financed sectors.

Financing of new vaccines will comply with the principle of GAVI co-financing, applied to fragile countries.

b) Needs of Resources

Table number 26: Projections of Needs of Resources in the period of 2007-2011

	Besoin en Ressources Futurs					
	2007	**2008**	**2009**	**2010**	**2011**	**Total 2007 - 2011**
	US$	**US$**	**US$**	**US$**	**US$**	**US$**
Vaccins	$374 313	$2 256 032	$1 938 596	$2 041 661	$2 106 676	$8 717 278
- Vaccins traditionnels	$205 307	$140 733	$146 769	$152 369	$156 934	$802 112
- Vaccins nouveaux et sous-utilisés	$169 006	$2 115 299	$1 791 827	$1 889 292	$1 949 743	$7 915 166
Matériel d'injection	$113 632	$140 587	$154 751	$166 528	$171 337	$746 835
Personnel	$1 262 800	$1 397 244	$1 471 129	$1 592 679	$1 655 731	$7 379 583
- Salaires du personnel employé à temps	$728 059	$795 539	$847 434	$901 087	$944 068	$4 216 188
- Indemnités journalières pour la stratégie	$114 138	$129 650	$141 239	$153 240	$162 544	$700 811
- Indemnités journalières pour la supervisi	$420 603	$472 055	$482 456	$538 352	$549 119	$2 462 585
Transport	$146 934	$147 160	$186 936	$202 568	$222 563	$906 161
- Stratégie fixe et livraison des vaccins	$93 334	$76 593	$78 974	$81 437	$84 034	$414 372
- Stratégie avancée et mobile	$53 600	$70 566	$107 963	$121 131	$138 529	$491 789
Maintenance et frais généraux	$775 726	$870 498	$947 799	$1 006 220	$1 072 720	$4 672 963
Chaînes du Froid	$552 354	$617 231	$674 046	$763 344	$805 055	$3 412 031
Autres Équipements	$82 283	$109 356	$126 964	$93 152	$114 945	$526 699
Bâtiments	$141 089	$143 911	$146 789	$149 725	$152 719	$734 233
Formation à court terme	$105 683	$135 236	$37 984	$38 743	$39 518	$357 164
Mobilisation sociale et IEC	$66 292	$31 359	$20 991	$18 352	$17 679	$154 673
Contrôle et surveillance des maladies	$244 416	$271 451	$266 885	$272 223	$277 667	$1 332 642
Gestion du programme	$176 779	$225 393	$183 921	$187 599	$232 949	$1 006 640
Autres coûts récurrents	$3 843	$3 920	$3 998	$4 078	$4 160	$19 999
Sous Total des Coûts Récurrents	**$3 270 418**	**$5 478 880**	**$5 212 989**	**$5 530 652**	**$5 801 000**	**$25 293 939**
Véhicules	$14 411	$125 436	$33 985	$206 971	$0	$380 803
Équipement de la Chaîne du froid	$173 333	$222 307	$209 674	$118 349	$58 907	$782 570
Autres coûts de capital	$170 996	$152 701	$105 468	$70 042	$97 849	$597 056
Sous Total des Coûts en Capital	**$358 740**	**$500 444**	**$349 128**	**$395 361**	**$156 756**	**$1 760 429**

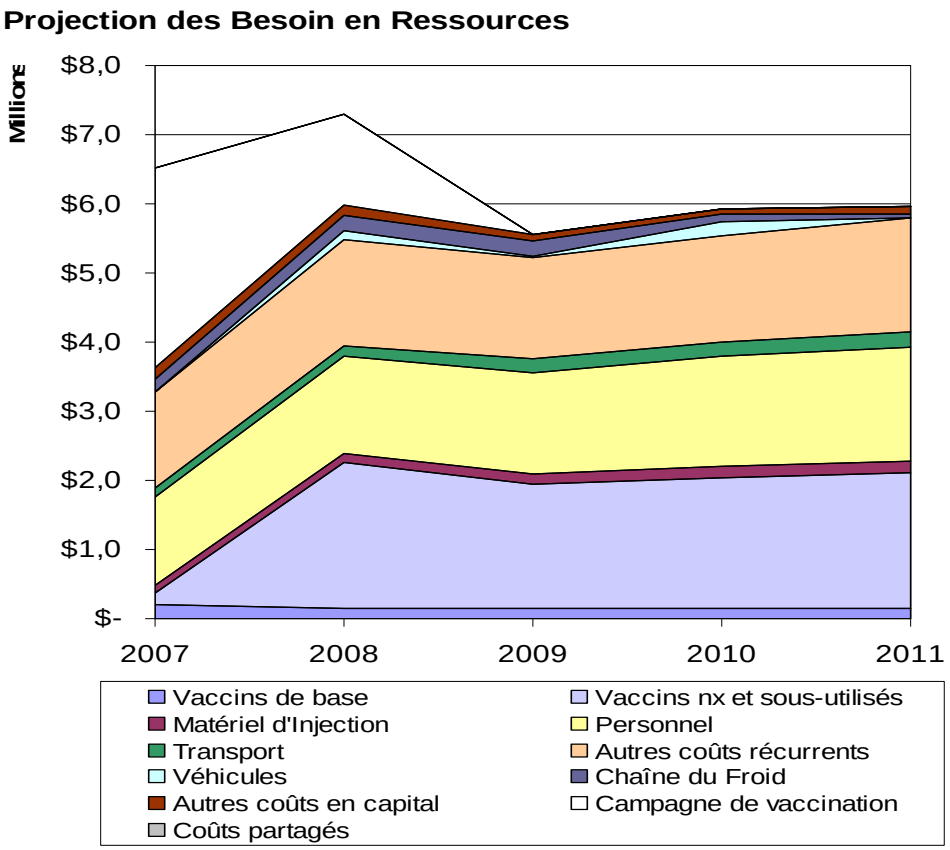
Polio	$286 803	$291 435	$0	$0	$0	$578 238
Vaccins	$55 241	$55 241	$0	$0	$0	$110 481
Coûts opérationnels	$231 563	$236 194	$0	$0	$0	$467 756
Rougeole	$0	$1 034 496	$0	$0	$0	$1 034 496
Vaccins et Matériel d'Injection	$0	$242 383	$0	$0	$0	$242 383
Coûts opérationnels	$0	$792 113	$0	$0	$0	$792 113
Tétanos néonatal	$2 595 306	$0	$0	$0	$0	$2 595 306
Vaccins et Matériel d'Injection	$340 641	$0	$0	$0	$0	$340 641
Coûts opérationnels	$2 254 665	$0	$0	$0	$0	$2 254 665
Sous Total des Coûts en Campagne	**$2 882 109**	**$1 325 931**	**$0**	**$0**	**$0**	**$4 208 040**
Coûts partagés de personnel	$1 115 701	$1 273 497	$1 301 066	$1 476 792	$1 508 075	$6 675 131
Coûts partagés de transport	$1 739 457	$1 774 246	$1 809 731	$1 845 926	$1 882 844	$9 052 204
Bâtiments	$296 873	$222 649	$68 370	$66 067	$46 798	$700 758
Subtotal des Coûts Partagés	**$3 152 031**	**$3 270 393**	**$3 179 168**	**$3 388 785**	**$3 437 717**	**$16 428 093**
0	**$9 663 298**	**$10 575 647**	**$8 741 286**	**$9 314 798**	**$9 395 473**	**$47 690 501**
Vaccination de Routine (Stratégie Fixe)	**$6 357 335**	**$8 610 431**	**$8 062 101**	**$8 592 998**	**$8 615 008**	**$40 237 873**
Vaccination de Routine (Stratégie Avanc	**$423 853**	**$639 285**	**$679 185**	**$721 800**	**$780 465**	**$3 244 588**
Campagnes de Vaccination	**$2 882 109**	**$1 325 931**	**$0**	**$0**	**$0**	**$4 208 040**

The amount of resources, required for the 2007-2011 plan period is estimated at $47,690,501 US with a mean annual amount of $9,538,100 US.

The cost of program is broken down, as follows: recurrent costs – 53%, capital costs – 4%, campaigns – 9%, and shared costs – 34%. It must be noted that the capital cost diminished in comparison with the reference year (6%). This is justified by the renewal of the cold chain equipment in 2005.

The analysis of costs according to the routine immunization strategies shows that the fixed strategy represents 84%, while advanced and mobile strategy represents 7% and vaccination campaigns - 9%.

Figure 8



The program costs increase in 2008 in comparison with 2007. This is caused by the introduction of the pentavalent vaccine. It must be noted that MNT and measles follow-up campaigns influence the program costs in 2007 and 2008.

7.4.2. Analysis of Projected Financing Availability

7.4.2.1. Secured Financing

Secured financing results from concrete commitments of the Government and Partners. The following Table 27 presents the level of secured financing in comparison with the total cost and by item for the whole period.

Table number 27 : Level of secured financing in comparison with the total cost

Année	TOTAL 2007-2011		
	Besoin en Ressources	Financement Assuré	Pourcentage
Total des Coûts Récurrents	$ 25 293 939	$ 23 884 174	94%
Total des Coûts en Capital	$ 1 760 429	$ 716 667	41%
Total des Coûts en Campagne	$ 4 208 040	$ 3 971 958	94%
Total des Coûts Partagés	$ 16 428 093	$ 13 935 612	85%
TOTAL GENERAL	$ 47 690 501	$ 42 508 411	89%
Services de Routine	$ 43 482 460	$ 38 536 453	89%
Campagnes de Vaccination	$ 4 208 040	$ 3 971 958	94%

Compared to the total cost of the program, the proportion of secured financing for the period from 2007 to 2011 is 89%; 89% for the routine PEV and 94% for vaccination campaigns.

This high percentage of secured financing is the result of GAVI contribution for the DTC-HepB-Hib vaccine, which will be introduced in 2008 and payment of staff salaries by the Government.

7.4.2.2. Composition of Financial Needs

The financial needs calculated above are based on the following main financing hypotheses:

- The traditional vaccines are financed by UNICEF and the State
- New and rarely used vaccines are financed by the State and GAVI, in accordance with the GAVI co-financing principle.
- Injection equipment is financed by UNICEF and the State.

Table number 28 : Needs by type of financing in USD, CAR - 2007-2011

Composition des Écarts Financiers	2007	2008	2009	2010	2011	2007 - 2011
Vaccins et matériel d'injection	$0	$0	$0	$0	$0	$0
Personnel	$96 198	$47 205	$144 737	$213 818	$137 156	$639 115
Transport	$10 117	$40 976	$33 183	$33 881	$48 182	$166 339
Activité et autre coûts récurrents	$130 093	$148 861	$118 857	$87 820	$118 679	$604 311
Logistiques (véhicules, chaîne du froid....)	$235 367	$278 137	$139 454	$285 873	$104 931	$1 043 762
Campagne de vaccination	$200 483	$35 599				$236 082
Écart Financier*	**$672 259**	**$550 779**	**$436 231**	**$621 392**	**$408 947**	**$2 689 609**

According to the resource need analysis, the total need is $2,689,609 US, with an annual mean of $537,922 US.

The needs shown in the table above constitute uncovered amounts required for the PPAC implementation. The positions, for which the financing needs remain very high are logistics (39%), hiring of the staff (24%) and activities and other recurrent costs (22%).

8. PROGRAM FEASIBILITY AND PPAC IMPLEMENTATION STRATEGIES

The following strategies will be used to make the strategic financing plan feasible:

i) Strategy of mobilization of reliable and adequate resources
ii) Strategy of increase of efficiency of use of the resources.

These strategies have already been developed in the draft of the financial feasibility plan (PVF) 2004-2007 of PEV. They remain valid and can be adopted to the present plan.

8.1. Strategies of Mobilization of Reliable and Adequate Resources

8.1.1. Strategy of Mobilization of Internal Resources

a) At the State Level

The State must devote at least 10% of its budget to health care according to the WHO recommendations. Moreover, the summit of state heads held in Abuja in April 2001 recommends 15%.

A plea will be addressed to the Government and National Assembly to follow these recommendations.

Starting from 2008, the State is planning to introduce new vaccines and, therefore, it will increase the budget for purchase of vaccines and injection equipment.

Moreover, the country is about to complete the PPTE initiative, which will provide resources to support the program by 2008.

b) On the Level of Local Collectivities

In view of decentralization, their participation will be more active because of their important role in the management of local development.

Local collectivities participate in financing of health care expenses, in particular those related to PEV through their investment budget. The Government decided that local collectivities would contribute to the health care budget to implement the Government's health care policies.

The senior staff of the regions and districts will be involved more in mobilization of resources from local collectivities (general council, municipal council).

c) At the Level of Community

The community, apart from physical activities performed in the field of health care, for example their contribution to construction of basic health care stations, participates in financing of health care expenses through the system of covering of health care costs. A part of collected funds will be used to buy fuel to assure the functioning of the cold chain and purchase of fuel for the advanced strategy.

In order to increase the contribution of the community financing in the program, the technical and material capacity (management tools) of management committees on the health care center level will be improved in the context of strengthening of the health care system.

d) Partnership With NGO and the Private Sector

The partnership with the NGO and the private sector will be strengthened in order to mobilize resources, available for the program.

8.1.2. Strategy of Mobilization of External Resources

The health care policy of the central African Government regarding financing involves combination of national effort and the effort of technical and financial partners to increase the resources for the sector in the framework of the partnership. This implies setting up a coordination and exchange framework with all the partners:

- Vigorous diplomacy for return of U(JICA, GTZ…)
- Strong pleas in order to extend the cooperation to new partners;
- Improvement of functioning of CCIA;
- Rational management of resources allocated to the program on all levels;

9. PPAC FOLLOW-UP AND EVALUATION MECHANISMS

The following instruments will be used for the PPAC evaluation:

9.1. For the Follow-Up

- National Health Care Information System (SNIS)

Routine data collected within SNIS will assure the follow-up of each level of the system. Similarly, integrated epidemiological monitoring of diseases will be performed by the Epidemics Management and Emergency Situation Management System supported by the WHO.

- Surveys

Epidemiologic or social surveys will be conducted to have reliable data for monitoring of the progress.

- Supervision and monitoring

The supervision and monitoring system will be strengthened on all levels of the health care pyramid. It will be developed through a regular plan of monitoring of health care activities on all levels. The central level will supervise the activities of health care regions on a quarterly basis. Health care prefectures will be supervised every two months by the regions and in turn the will provide a close supervision of health care institutions in their respective areas.

- Reviews

The Ministry of Public Health and Population, in cooperation with the Ministry of Finances and Budget, Ministry of Economy, Planning and International Cooperation, as well as the partners, will organize internal and external periodical reviews. An internal review will be performed in 2009 in order to correct imperfections and orient future actions.

9.2. For the Evaluation

Periodical evaluations will be performed within the implementation of this 2007-2011 PPAC, both in terms of execution of regular activities and in terms of introduction of new vaccines and new immunization technologies. An intermediate evaluation will be performed in 2009 to appreciate the level of meeting of objectives, improve the planning and plan management for the last two years. A final evaluation will be performed one year before the end of PPAC inn order to prepare a future PPAVC for the period 2012 – 2015. These last two evaluations will be external.

9.3. Indicators

The main PPAC evaluation follow-up indicators are:

- Immunization coverage rate by antigen and by district;
- DTC3 immunization coverage rate by district,
- % of districts with the DTC3 rate > 80%
- DTC and VAR drop-out rate by district;
- % of districts with the DTC1 – DTC3 rate < 10%
- Loss rate by antigen and by district;
- % of districts adopting the "ACD" approach;
- % vaccination centers without vaccine stock out during the year;
- Number and proportion of FOSA using self-locking syringes;
- Number and proportion of using incinerators to destroy used equipment;
- Report promptness and completeness rate by prefecture;

- Incidence and mortality of PEV target diseases:
  - ✓ Severe MAPI incidence rate;
  - ✓ Annualized rate of non polio AFP cases: 12.7 (> 2)
  - ✓ Percentage of stool samples tested within 14 days: 96 % (>80%)
  - ✓ Detection of AFP cases covers the whole territory of the country;
  - ✓ Rate of increase of the state budget for PEV;
  - ✓ The MNT incidence rate appears to be lower than 1 case per 1,000 LB;
  - ✓ Reporting of at least one suspected case of yellow fever;
  - ✓ % of districts that investigated at least one suspected case of measles;
  - ✓ % of districts that investigated all outbursts of measles;

- Execution rate of the State budget allocated to PEV;
- Level of participation of community participation bodies in PEV activities;
- Number and proportion of follow-up meetings held;
- Amount and percentage of the State budget allocated to health care and to PEV;
- Respective contributions of various partners (State, communities and external help) to the PEV budget (in %)

10. 2007 ACTION PLAN

10.1. Objectives

10.1.1. General Objectives

1. Reach the immunization coverage rate for all antigens of 75% on the national level with at least 70% in each district.
2. Reduce the loss rate of each antigen according to the recommended norms
3. Prepare the introduction of vaccines against Hep B and Hib in the routine PEV
4. Eradicate Polio, eliminate MNT, yellow fever and rubella
5. Ensure injection safety and better waste management.

6. Increase financial, material and human resources in favor of PEV and improve their management

10.1.2. Specific Objectives

1) Reach the immunization coverage rate of:

   - DTC3 > or = 80% in 70% of the districts and at least 75% on the national level
   - VPO3 > or = 80% in 70% of the districts and at least 75% on the national level
   - BCG of 90% on the national level
   - VAR of 75% on the national level
   - VAA of 75% on the national level

2) Reduce the antigen loss level (VAR and VAA of 35 to 30%) avoiding stock outs of vaccines and consumables in 80% of districts and cold chain stock out in 60% of districts

3) Prepare introduction of new vaccines (hepatitis B and Haemophilus influenzae b) in the routine PEV

4) Eradicate Polio, eliminate MNT, yellow fever and measles:

   - No isolated PVS cases
   - Reach and maintain a real level of MNT < 1 case per 1,000 LB
   - Control measles
   - Eliminate yellow fever

5) Assure injection safety and a better waste management by:

   - Developing a national plan for management of hospital waste
   - Guaranteeing use of disposable syringes appropriate for vaccination in 100% of PEV centers.

6) Improve the financial, material and human resources devoted to PEV and improve their management by:

   - Actually allocating 10% of financial resources of the State to vaccination;
   - Equipping 60% of PEV staff in qualified staff;
   - Equipping 60% of health care districts in appropriate motor vehicles;
   - Assuring equipment maintenance at 60%.

10.2. Strategies

The following strategies will be developed to meet the above-mentioned objectives:

1. Implementation of the ACD strategy;
2. Strengthening of the health care system;
3. Strengthening of technical and material capacities (including injection safety and management of hospital waste);
4. Setting up of a staff compensation system;
5. Organization of additional vaccination activities;
6. Integration of other minimal packages of services in the routine PEV;
7. Strengthening of integrated monitoring of diseases;
8. Preparation for introduction of new vaccines;
9. Pleading, communication and mobilization of resources.

10.3. Schedule of Activities

Table number 29: Calendar of Activities of the 2007 Action Plan

MAIN ACTIVITIES	January	February	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Entity Responsible
A. PROVIDING OF SERVICE													
1. Improve advanced strategy vaccination teams					X	X	X	X	X	X	X	X	DPEV
2. Provide training supervision					X	X	X	X	X	X	X	X	DPEV, DRS, ECD, Partners
3. Monitor activities of vaccination service centers					X	X	X	X	X	X	X	X	DPEV, DRS, ECD
4. Organize micro-planning workshops for routine activities			X									X	DPEV
5. Train PEV managers on the central, regional and prefecture levels in planning, management, follow-up, monitoring and evaluation						X	X	X	X	X	X	X	DPEV, Partners
6. Train health care workers of operational units in PEV managements and preventive maintenance of the cold chain						X	X	X	X	X	X	X	DPEV, Partners, DRS, ECD
7. Define the modalities of motivation of staff who showed good performance on all levels					X	X							DPEV
8. Motivate the staff who showed good performance on all levels							X	X	X	X	X	X	DPEV, Partners
9. Regularly supply PEV centers with vaccines and cold chain accessories	X	X	X	X	X	X	X	X	X	X	X	X	DPEV
10. Regularly supply PEV centers that have fuel supply difficulties	X	X	X	X	X	X	X	X	X	X	X	X	DPEV
11. Develop/adapt/produce the routine PEV data management tools and disease monitoring tools						X							DPEV, Partners
12. Prepare micro-plans for additional vaccination activities		X		X							X		DPEV, DSC, DMPM, DCS, DRS
13. Organize additional activities of vaccination, distribution of micro-nutrition supplements, MII and		X			X	X	X				X		

	Mebendazole			
14.	Organize a quarterly review of routine PEV	X	X	DPEV, Partners

MAIN ACTIVITIES	January	February	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Entity Responsible
B. REDUCTION OF VACCINE LOSS RATES													
15. Train / re-train the managers of central and regional warehouses and ECD members in computerized management of vaccines						X	X						DPEV
16. Adapt the vaccine loss rates reduction plan, taking into account the new vaccines				X	X								DPEV
17. Prepare and diffuse the vaccine loss rates reduction plan, as well as the directives regarding the open bottles policy.					X	X	X	X	X	X	X	X	DPEV
18. Perform an evaluation of the loss rates						X	X						DPEV,
19. Monitor vaccine losses	X	X	X	X	X	X	X	X	X	X	X	X	DPEV,
C. INJECTIONS SAFETY AND WASTE MANAGEMENT													
20. Update the injection safety national plan							X	X					DPEV
21. Prepare a national plan regarding management of hospital waste							X	X					DPEV
22. Train health workers regarding injections safety and hospital waste management										X	X	X	DPEV, DRS, ECD
D. INTRODUCTION OF NEW VACCINES													
23. Prepare an action plan regarding the introduction of vaccination against Hepatitis B and haemophilus influenzae of type b in the routine PEV	X	X	X	X									DPEV, Partners
24. Adopt an updated vaccination calendar and management tools					X	X							DPEV
25. Develop a training module for introduction of HepB and Hib;					X	X							DPEV
26. Train the agents involved in HepB and Hib vaccines management in the districts										X	X	X	DPEV, DRS, ECD
27. Order vaccines and other supplies										X			DPEV

MAIN ACTIVITIES	January	February	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Entity Responsible
E. ERADICATION OF POLIO, ELIMINATION OF MNT AND OF THE YF AND MEASLES CONTROL													
28. Organize a mass vaccination campaign against the MNT						X	X						DPEV
29. Organize responses according to the epidemiologic context					X	X	X	X	X	X	X	X	DPEV
30. Organize coordination meetings on the regional and national level regarding monitoring of AFP, measles, Yellow Fever and MNT cases.			X			X			X			X	DPEV, DSC, DMPM, DCS, DRS, Partners
31. Organize regular visits in the monitoring centers	X	X	X	X	X	X	X	X	X	X	X	X	DPEV, DMPM, DRS, ECD
32. Investigate any suspected case of AFP, Measles, Yellow Fever, MNT and MAPI	X	X	X	X	X	X	X	X	X	X	X	X	DRS, ECD
33. Financially and materially support functioning of various committees (CNEP CNC, Confinement)	X	X	X	X	X	X	X	X	X	X	X	X	DPEV, Partners
34. Supply Institut Pasteur of Bangui with equipment and consumables	X	X	X	X	X	X	X	X	X	X	X	X	DPEV, Partners
35. Train agents in integrated epidemiological monitoring								X	X	X	X	X	DPEV, DMPM, DRS, ECD
36. Supply FOSA in means of communication in order to transmit data							X	X	X	X	X	X	DPEV, Partners
37. Prepare and publish a feedback information bulletin for health care workers						X						X	DPEV
38. Perform the follow-up and evaluation of monitoring activities	X	X	X	X	X	X	X	X	X	X	X	X	DPEV
39. Perform research of MAPI											X	X	DPEV
F. INFORMATION AND COMMUNICATION IN FAVOR OF PEV													
40. Prepare and validate the integrated plan of communication					X	X							DPEV, DCS, DSC

MAIN ACTIVITIES	January	February	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Entity Responsible
F. INFORMATION AND COMMUNICATION IN FAVOR OF PEV													
41. Train animators, skilled in communication techniques								X	X	X	X	X	DCS, DPEV
42. Train media communicators in PEV communication techniques								X	X	X	X	X	DCS, DPEV
43. Train PEV agents in communication on all levels								X	X	X	X	X	DCS, DPEV
44. Produce / equip PEV centers and native structures with educative PEV materials							X	X	X	X	X	X	DCS, DPEV
45. Create the DCS educational materials and supply them to the reproduction unit												X	DCS, DPEV
46. Popularize information in favor of PEV through mass media and traditional communication channels (theatre performers, traditional dance groups)	X	X	X	X	X	X	X	X	X	X	X	X	DCS, DPEV
47. Monitor and evaluate social mobilization activities	X	X	X	X	X	X	X	X	X	X	X	X	DCS, DPEV
48. Conduct behavioral studies										X	X	X	DCS
G. FINANCIAL STABILITY AND OTHER RESOURCES													
49. In cooperation with the Ministries of Planning and Finances develop a new approach of substantial allocation and actual disbursement of credits in favor of PEV					X	X							DPEV, CCIA
50. Develop managerial skills of the staff of Ministries of Health, Planning and Finances regarding the financial management of PEV					X	X							DPEV
51. Ensure the follow-up of PEV financing by CCIA	X	X	X	X	X	X	X	X	X	X	X	X	CCIA
52. Set up an audit committee within CCIA and define its functioning modalities;								X					CCIA
53. Conduct audits of PEV activities									X	X	X	X	CCIA
54. prepare quarterly financial reports and send copies to CCIA and GAVI.			X			X			X			X	DPEV

MAIN ACTIVITES	January	February	March	April	May	June	July	August	Sept	Oct	Nov	Dec	Entity Responsible
H. FINANCIAL STABILITY AND OTHER RESOURCES													
55. Make a plea in favor of immunization independence to the highest executive (information note to the President of the Republic and the Council of Ministers) and legislative authorities				X	X								DPEV
56. Make a plea to the private sector and NGO for financing of vaccination				X	X	X	X	X	X	X	X	X	DPEV
57. Make a plea to the Government to hire health care workers	X	X	X	X	X	X	X	X	X	X	X	X	DPEV
58. Develop a national maintenance policy										X	X		DPEV
59. Make a plea to U.C.M., COGES and development partners for setting up a stable system of supply of fuel and cold chain accessories to the vaccination centers					X	X							DPEV

10.4. Budget

Table number 30: Program costs in 2007

	Besoin en Ressources	Gouvernement national	OMS	UNICEF	GAVI	Financement communautaire
Coût Récurrent	**US$**	**US$**	**US$**	**US$**	**US$**	**US$**
Vaccins	$ -	$ -	$ -	$ -	$ -	$ -
- Vaccins traditionnels	$ 205 307	$ -	$ -	$ 205 307	$ 102 653	$ -
- Vaccins nouveaux et sous-utilisés	$ 169 006	$ -	$ -	$ 169 006	$ -	$ -
Matériel d'injection	$ 113 632	$ -	$ -	$ 113 632	$ -	$ -
Personnel	$ -	$ -	$ -	$ -	$ -	$ -
- Salaires du personnel employé à temps	$ 728 059	$ 728 059	$ -	$ -	$ -	$ -
- Indemnités journalières pour la stratégie	$ 114 138	$ -	$ 60 000	$ -	$ 42 060	$ -
- Indemnités journalières pour la supervis	$ 420 603	$ 842	$ 188 429	$ 147 211	$ -	$ 42 060
Transport	$ -	$ -	$ -	$ -	$ -	$ -
- Stratégie fixe et livraison des vaccins	$ 93 334	$ 9 325	$ 40 137	$ 40 137	$ -	$ 3 734
- Stratégie avancée et mobile	$ 53 600	$ 7 150	$ 9 320	$ 7 320	$ 23 427	$ 3 200
Maintenance et frais généraux	$ -	$ -	$ -	$ -	$ -	$ -
Chaînes du Froid	$ 552 354	$ -	$ -	$ 552 354	$ -	$ -
Autres Équipements	$ 82 283	$ -	$ 8 228	$ 74 055	$ -	$ -
Bâtiments	$ 141 089	$ 141 089	$ -	$ -	$ -	$ -
Formation à court terme	$ 105 683	$ -	$ -	$ -	$ -	$ -
Mobilisation sociale et IEC	$ 66 292	$ -	$ -	$ 66 292	$ -	$ -
Contrôle et surveillance des maladies	$ 244 416	$ -	$ 244 416	$ -	$ -	$ -
Gestion du programme	$ 176 779	$ 10 000	$ -	$ -	$ 146 212	$ -
Autres coûts récurrents	$ 3 843	$ -	$ -	$ -	$ -	$ 3 843
Sous Total des Coûts Récurrents	**$ 3 270 418**	**$ 896 465**	**$ 550 531**	**$ 1 375 315**	**$ 314 351**	**$ 52 837**
Coût en Capital	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Véhicules	$ 14 411	$ 14 411	$ -	$ -	$ -	$ -
Équipement de la Chaîne du froid	$ 173 333	$ -	$ -	$ 123 373	$ -	$ -
Autres coûts de capital	$ 170 996	$ 170 996	$ -	$ -	$ -	$ -
Sous Total des Coûts en Capital	**$ 358 740**	**$ 185 407**	**$ -**	**$ 123 373**	**$ -**	**$ -**
Campagnes de Vaccination	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Polio	$ -	$ -	$ -	$ -	$ -	$ -
Vaccins	$ 55 241	$ -	$ -	$ 55 241	$ -	$ -
Coûts opérationnels	$ 231 563	$ -	$ 190 864	$ 31 079	$ -	$ -
Vaccins et Matériel d'Injection	$ 340 641	$ -	$ -	$ 340 641	$ -	$ -
Coûts opérationnels	$ 2 254 665	$ -	$ -	$ 2 254 665	$ -	$ -
Sous Total des Coûts en Campagne	**$ 2 882 109**	**$ -**	**$ 190 864**	**$ 2 681 626**	**$ -**	**$ -**
Coûts partagés	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Coûts partagés de personnel	$ 1 115 701	$ 1 014 728	$ -	$ -	$ -	$ 8 119
Coûts partagés de transport	$ 1 739 457	$ 1 739 428	$ -	$ -	$ -	$ -
Bâtiments	$ 296 873	$ 247 108	$ -	$ -	$ 48 737	$ -
Subtotal des Coûts Partagés	**$ 3 152 031**	**$ 3 001 264**	**$ -**	**$ -**	**$ 48 737**	**$ 8 119**
TOTAL GENERAL	**$ 9 663 298**	**$ 4 083 136**	**$ 741 395**	**$ 4 180 314**	**$ 363 089**	**$ 60 956**

For the 2007-2011 Multi-Annual Complete Plan of the Expanded Program on Immunization, the integration of activities into routine vaccination and AVS will continue in order to maximize the chance of reducing the mortality of children and women.

To that effect, emphasis will be places on coordination of interventions that will be a part of additional service package. Resources will be shared in order to save money and give the chance to all target groups from all geographic areas of the Central African Republic.

CONCLUSION

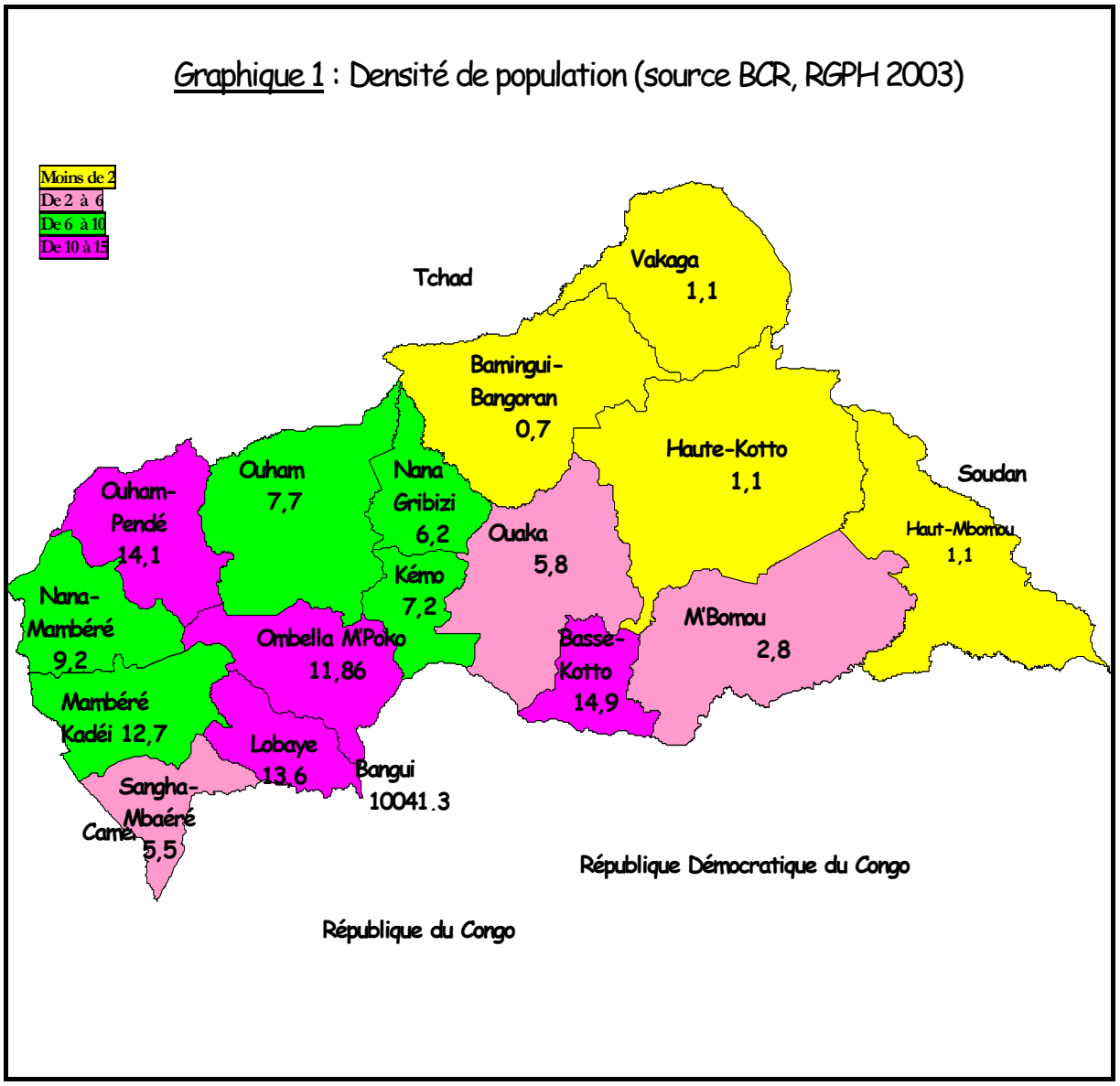
The present Complete Multi-Annual Plan (PPAC) for 2007- 2011 is a part of the 2006-2015 National Health Care Development Plan, which is an instrument for development of the national health care policy. Its objective is to improve the health situation of the Central African population. It will be executed through five-year plans and annual action plans in order to adapt it to the political and socio-economic context of the country.

The peace, political and economic stability of the country, political will at the highest levels of the State, development of a new, strong partnership, multi-sector cooperation, improvement of financing of the health care sector, cooperation between the public and private sector, active involvement of the society, including the community, constitute other factors determining successful implementation of the Plan.

To do so, the Government of the Central African Republic, aware of the serious health care situation of its population, makes a commitment to allocate the necessary resources within the limits of its capacities and take all measures useful for the implementation of the plan and assure stable financing of PEV. In the current context of economic and financial difficulties, the Government counts on national and international solidarity for mobilization of additional resources required in order to achieve the established millennium development objectives.

APPENDICES

APPENDIX 1: CENTRAL AFRICAN POPULATION DENSITY



APPENDIX 2: DIVISION OF THE COUNTRY DURING THE ARMED CONFLICTS OF OCTOBER 2005 – MARCH 2006