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MINISTER OF PUBLIC HEALTH

SECRETARIAT OF STATE

SECRETARIAT GENERAL

GENERAL DIRECTORATE OF HEALTHCARE ACTIVITIES

DIRECTORATE OF HEALTH AND REPRODUCTION AND

IMMUNISATION

IMMUNISATION DIVISION



CHAD EPI

**COMPLETE MULTIYEAR PLAN FOR THE
EXPANDED PROGRAMME ON IMMUNISATION
OF CHAD**

2008- 2012

N'Djaména, 2007

ABBREVIATIONS / ACRONYMS

AVS	Activités de Vaccination Supplémentaires (<i>Supplemental Immunisation Activities, SIA</i>)
ACD	Atteindre Chaque District (<i>Reach Every District, RED</i>)
BCG	Bacillus of Calmette and Guérin (TB vaccine)
BCR	Bureau Central de Recensement (<i>central census bureau</i>)
BELACD	Bureau de Liaison de l'Action Caritative pour le Développement (<i>liaison bureau for charity development activities</i>)
BET	Borkou Ennedi Tibesti
BM	Banque Mondiale (<i>WB, World Bank</i>)
CAEDESCE	Coordination des Actions d'Education, de Développement Economique, Social et Culturel de l'Entente (<i>Coordination of Education and Economic, Social and Cultural Development Activities for the Agreement</i>)
CAP	Connaissances Attitudes et Pratiques (<i>Knowledge, Attitudes and Practices, KAP</i>)
CATR	Cellule d'Appui Technique Régionale (<i>Regional Technical Support Cell</i>)
CCIA	Comité de Coordination Inter Agence (<i>Inter-Agency Coordinating Committee, ICC</i>)
CDF	Chaîne de froid (<i>cold chain</i>)
CFC	Chloro Fluoro Carbon
CIP	Communication Interpersonnelle (<i>interpersonal communication</i>)
CNS	Conférence Nationale Souveraine (<i>sovereign national conference</i>)
CODESEET	Coordination du Département Santé des Eglises Evangéliques au Tchad (<i>Health Department coordination with evangelical churches of Chad</i>)
COGES	Comité de Gestion (<i>management committee</i>)
COSAN	Comité de Santé (<i>health committee</i>)
CS	Centre de Santé (<i>health centre</i>)
CV	Couverture Vaccinale (<i>vaccine coverage</i>)
DGAS	Direction Générale des Activités Sanitaires (<i>general directorate of healthcare activities</i>)
DCAP	Direction de la Coordination des Activités en matière de la Population (<i>coordinating directorate of population-related activities</i>)
BIEC	Bureau for Information Education and Communication
DSRP	Document de Stratégie Nationale de Réduction de la pauvreté (<i>Poverty Reduction Strategy Development, PRSD</i>)
DSR	Délégation Sanitaire Régionale (<i>regional health delegation</i>)
DS	District de Santé (<i>health district</i>)
DSIS	Division du Système d'Information Sanitaire (<i>Health Information System Division</i>)
DTP	Conjugated diphtheria – tetanus – pertussis vaccine
DQA	Data Quality Audit
EEMET	Entente des Eglises et Missions Evangéliques au Tchad (<i>evangelical churches and missions of Chad agreement</i>)
ECOSIT	Enquête sur la Consommation et le Secteur Informel (<i>survey of consumption and the informal sector</i>)
EIMT	Etude à Indicateurs Multiples au Tchad (<i>Chad Multiple Indicators Study</i>)
FRPC	Facilité pour la Réduction de la Pauvreté et la Croissance (<i>Poverty Reduction and Growth Facility, PRGF</i>)
FASR	Facilité d'Ajustement Structurel Renforcée (<i>Enhanced Structural Adjustment Facility, ESAF</i>)
FS	Formation Sanitaire (<i>healthcare training</i>)
GAVI	Global Alliance for Vaccines and Immunisation
IEC	Information Education and Communication

IIV	Initiative pour l'Indépendance Vaccinale (<i>Vaccine Independence Initiative, VII</i>)
INSEED	Institut National de la Statistique des Etudes Economiques et Démographiques (<i>National Institute of Statistics of Economic and Demographic Studies</i>)
ITS	Institut Tropical Suisse (<i>Swiss Tropical Institute</i>)
JNV	Journées Nationales de Vaccinations (<i>National Immunisation Days</i>)
MCD	Médecin Chef de District (<i>chief district physician</i>)
MSP	Ministère de la Santé Publique (<i>Ministry of Public Health, MOPH</i>)
MICS	Multiple Indicator Cluster Surveys
MP	Ministère du Plan (<i>Plan Ministry</i>)
OMS	Organisation Mondiale de la Santé (<i>World Health Organisation, WHO</i>)
OMD	Objectif du Millénaire pour le Développement (<i>Millennium Objective Goals</i>)
ONG	Organisation Non Gouvernementale (<i>Non-Governmental Organisation</i>)
PASS	Programme d'Appui au Secteur de la Santé (<i>health sector support programme</i>)
PCA	Paquet Complémentaire d'activités (<i>Supplementary Package of Assistance</i>)
PCIME	Prise en Charge Intégrée des Maladies de l'Enfance (<i>Integrated Management of Childhood Diseases, IMCD</i>)
PCV	Pastille de Contrôle des Vaccins (<i>vaccine vial monitors</i>)
PEV	Programme Elargi de Vaccination (<i>Expanded Programme on Immunisation, EPI</i>)
PFA	Paralysie Flasque Aiguë (<i>Acute Flaccid Paralysis, AFP</i>)
PIC	Plan Intégré de Communication (<i>integrated communication plan</i>)
PMA	Paquet Minimum d'activités (<i>Minimum Package of Assistance</i>)
PPN	Politique Pharmaceutique Nationale (<i>national pharmaceutical policy</i>)
PPTTE	Pays Pauvres Très Endettés (<i>Highly Indebted Poor Countries, HIPC</i>)
PRA	Pharmacie Régionale d'Approvisionnement (<i>regional supplying pharmacy</i>)
RGPH	Recensement Général de la Population et de l'Habitat (<i>General Population and Housing Census</i>)
RMA	Rapport Mensuel d'Activités (<i>monthly activity report</i>)
SAB	Seringues Autobloquantes (<i>AD syringes</i>)
SECADEV	Secours Catholique de Développement (<i>Catholic development aid</i>)
SIS	Système d'information Sanitaire (<i>healthcare information system</i>)
SNPEV	Service National du PEV (<i>national EPI service</i>)
SASDE	Stratégie d'Accélération de Survie et du Développement de l'Enfance (<i>Strategy for Accelerating Survival and Development of Children</i>)
SSEI	Service de Surveillance épidémiologique intégré (<i>integrated epidemiological surveillance service</i>)
SOS	Sustainable Outreach Services (Stratégie Avancée Durable)
SOU	Soins Obstétricaux d'Urgence (<i>emergency obstetric care</i>)
TMN	Tétanos maternel et néonatal (<i>maternal and neonatal tetanus, MNT</i>)
UE	Union Européenne (<i>European Union, EU</i>)
UNICEF	United Nations Childrens Fund
VAA	Vaccin Anti-Amaril (<i>yellow fever vaccine, YFV</i>)
VAR	Vaccin Anti rougeoleux (<i>measles-containing vaccine, MCV</i>)
VAT	Vaccin Antitétanique (<i>tetanus toxoid vaccine, TT</i>)
VPO	Vaccin Polio Oral (<i>oral polio vaccine, OPV</i>)
ZR	Zone de responsabilité (<i>responsibility zone</i>)

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0. SUMMARY

This cMYP from Chad follows the previous multiyear plan for 2003-2007. In 2002 the Government of Chad submitted a proposal to GAVI for financial support for the immunisation system, injection safety and the introduction of new vaccines and under-used vaccines. This request was accepted for the 5-year period from 2003 to 2007. Chad has prepared this cMYP to respond to the requirements of the new GAVI policy (phase 2), which emphasizes sustainable EPI funding by the Government and its partners and ownership of the country's global immunisation strategy and vision.

The Ministry of Public Health has set up a multidisciplinary team in charge of producing the cMYP document, to allow a comprehensive and appropriate analysis of the conditions and the data gathered from various public departments and partners in the healthcare sector. The ICC approved this document in their 25 September meeting.

The primary objectives to be pursued through this document are:

1. Determining the priorities and responsibilities of the Government and its development partners in improving EPI performance;
2. Mobilising internal and external resources to ensure efficient utilisation;
3. Making an advocacy tool available to the Ministry of Public Health to better negotiate with the Ministry of Finance and Informatics and development partners, to help the fight against vaccine-preventable diseases.
4. Creating, at all levels, a framework for integrating immunisation activities based on the Strategy to Strengthen the Healthcare System (RSS).

The following 7 steps were instrumental in drawing up this cMYP:

1. General context

Chad is a large country in the heart of Africa. Geographically speaking, it does not have any access to oceans, and it is lacking in methods of communication. Chad is a very poor country (average per capita income is US\$ 389.80) with an illiteracy rate of around 66%. Life expectancy at birth is only 50.3 years. The synthetic fertility index is 6.3 for an estimated population of 10 104 300 in 2008, and a natural growth rate of 3.1%. Mother and child mortality are quite high (1099 per 100 000 live births and 102 per 1 000 live births, respectively).

The petroleum industry in Chad is promising in terms of creating opportunities for developing the healthcare sector and improving indicators.

2. Analysis of healthcare conditions

Conditions are characterized by extremely high morbidity and mortality rates in children under age 5. Note that **“One child out of five dies before reaching his 5th birthday”**, most from preventable causes. In this context emphasis is also on developing the economic, political and social situation, which create promising conditions for implementing sector strategies for growth and poverty reduction. Chad entered the group of petroleum-exporting countries in 2004, which offers it the chance to create a sustainable higher growth rate and to reduce poverty through the judicious use of its petroleum resources, notably applying legal measures on managing income from petroleum and other resources, which will be freed up through debt relief.

3. Analysis of EPI conditions

The analysis retraces the institutional framework for operating EPI within the Ministry of Health and reviews the Programme's performance in routine activities or campaigns to administer various antigens. It also sets the strategies for integrating other childhood survival activities into the context

of an operational healthcare system. EPI is a peripheral part of the Minimum Package of Assistance, and activities are implemented in the 18 regions and all of the health districts of the country.

Immunisation activities were selected as one of the 11 national priorities in the Ministry of Public Health emergency plan and in the National Health Policy document. In general, Programme performance has been significantly improved over the past 3 years. However, during this same period of time, the Programme has experienced a number of weaknesses. The most significant of these were related to the irregular supply of vaccines and other operational inputs, insufficient formative supervision at the intermediate and peripheral levels, not reaching children in difficult-to-access Health Centres, and instability and lack of motivation in the staff.

4. Priority problems and their causes

The analysis highlighted several priority problems in the various components of the program, i.e.: poor OPV3 coverage, leading to low collective immunity of children and perpetuating circulation of the wild polio virus; national vaccine coverage has not yet reached 90% for all antigens (33 out of 56 health districts have not achieved 80% vaccine coverage in DTP3 in 2006); poor allocation of the State budget to the MOPH, and thus to EPI.

Some of the primary causes are: Irregular immunization at the fixed stations because of the policy of using opened vials was poorly applied or not applied, leading to improper vaccine management; Irregularities in or absence of advanced strategies related to a lack of working funds or financial resources to provide for recurring costs; Poor application of the door-to-door strategy and poor supervision of teams during SIA, and multiple State priorities (Sudanese and Central African refugees and internally-displaced refugees in the eastern part of the country, social problems, etc.)

5. Objectives

In addition to the Programme's general objectives, which include (among others) increasing DTP3-HepB-Hib vaccine coverage to 90% in 80% of the districts by 2012, the cMYP sets forth operational objectives for each component of the EPI: eradicating polio by 2012, reducing the DTP1-DTP3 drop-out rate to < 5% in 80% of the Health Districts, reducing the wastage rate and creating sustainable funding for the Expanded Programme on Immunisation.

6. Strategies

The document recommends applying novel strategies (RED, SASDE, integrating childhood survival interventions) and determines the various strategic arms that will allow the Programme to reach the objectives pursued with GIVS. These strategic arms are: planning, management, research, monitoring/assessment, logistics strengthening, and communication strengthening for EPI and integrating interventions to avoid duplication.

7. Activities

A summary table shows the main activities to be conducted over time in accordance with the various strategies by intervention area. One of the spotlight activities in this stage is the use of the cMYP as an advocacy tool with national authorities to obtain greater commitment to sustained funding of immunisation activities and to strengthening the healthcare system.

8. Analysis of programme costs and funding

For 2006, the total cost of the program is US\$ 8 720 233, of which US\$ 3 024 830 (41%) is for recurring routine costs, US\$ 4 318 856 (59%) is for campaign costs, US\$ 1 376 547 (16%) is for shared costs, and US\$ 7 343 686 is for total immunisation expenses.

For the 2008 - 2012 period that concerns this cMYP, the overall budget is US\$ **99 797 925**. The costs increase gradually over the entire projection period depending most notably on the introduction of new vaccines.

Only 40% of the funding for the total programme costs is secured for the 2008 – 2012 period. However, one strength to note is that during the five previous years programme needs were more than 98% covered when the secured and probable funding were combined. This is a hopeful sign for the EPI and sustainability of the immunisation programme.

I. INTRODUCTION AND GENERAL CONTEXT

The current cMYP follows the 2003-2007 EPI MultiYear Plan. It covers the period from 2008 to 2012. It is an expression of the National Health Policy adopted in May 2007, which recommends EPI as a national priority in one of the strategic arms. It comes out of and is funded by the Ministry of Public Health (MOPH) programme budget.

The new strategic immunisation framework in the “Global Immunisation and Vision Strategies” (GIVS) adopted by the World Health Assembly in 2005 invites all countries to achieve and maintain at least 90% national vaccine coverage for all of the antigens at a national level, and at least 80% in all districts by 2010. It further recommends reducing measles-related mortality by 90% compared to 2000 during this same period.

During this Complete MultiYear Plan (cMYP) Chad will strive to achieve these objectives, valuing the role of immunisation in improving the health of the population and in reducing poverty; ensuring equal access to immunisation services to all; increasing the use of immunisation services by a greater number of people; and introducing new vaccines and ensuring that immunisation is integrated into other healthcare interventions.

2.1. Geographic and climate data

Chad is a vast Sudanian-Saharan country in the heart of Africa, 1 284 000 km² in area. It is bordered by Libya to the north, Sudan to the east, Niger, Nigeria and Cameroon to the west, and by the Central African Republic to the south.

Chad is a vast plain raised and bordered by mountains to the north and east. The country is divided into three climate zones: Saharan to the north (less than 300 mm of rain per year), Sahalien in the centre (300-800 mm) and Sudanian (800-1200 mm) in the south.

Chad is one of the Sahalien countries with the best water supply. The country has two (2) permanent rivers, the Chari (1 200 km) and the Logone (1 000 km), which empty into Lake Chad. There are several other non-permanent waterways (Barh Aouk, Batha, Barh Salamat, Bahr Azoum et Barh Sara) as well as other smaller lakes (Fitri, Iro, Wey, Ounianga, Léré).

The country has both external and internal barriers. The nearest port is 1700 km from the capital city of N'djamena, and there are approximately 1000 km of paved roads. Chad does not have a railroad network. Some regions are inaccessible during the rainy season.

2.2. Socio-demographic data

The 2008 population of Chad is estimated to be 10 154 300 on the basis of projected population data (DCAP). The natural growth rate was 3.1% in 2000 (DCAP, 2003). The synthetic fertility rate is 6.3 children per woman (EDST2, 2004).

The population, composed of many ethnic groups (about 256), is unevenly distributed across the country. The average density of 6.81 inhabitants/km² disguises many disparities (0.12 in BET at the extreme north, and 60.1 in Logone Occidental in the south of the country). The urban population is about 20% of the total, and the nomadic population is estimated to be 6%.

Distribution by age and sex shows that the Chadian population is quite young (48% under age 15, 15 to 59 estimated at 47%, and over 65 at 3.5%). Women represent 52% of the total population. Life expectancy at birth is estimated as 50.3 years.

Table 1: Demographic Indicators

Indicator	Value	Year	Source
Population	10 154 300	2008	DCAP/MEP

Natural growth rate	3.1%		<i>DCAP/MEP</i>
Population 0-11 months (3.6%)	365 555	2008	RGPH
Population 0-59 months (18.2%)	1 848 083	2008	RGPH
Population under 15 years (48%)	4 874 064	2008	RGPH
Women of childbearing age (22.8%)	2 315 180	2008	RGPH
Pregnant women (4.1%)	416 326	2008	RGPH
Gross birth rate	44.6 per thousand		RGPH
Synthetic index of fertility	6.3	2004	<i>EDST2</i>
Gross mortality rate	16.8 per thousand		
Infant mortality rate	102 per thousand	2004	<i>EDST2</i>
Infant-child mortality rate	191 per thousand	2004	<i>EDST2</i>
Maternal mortality rate	1099	2004	<i>EDST2</i>
Life expectancy at birth	50.3	1993	RGPH
Rural population	80%	1993	RGPH
Urban population	20%	1993	RGPH

There are several hundred languages in Chad. Arabic and French are the official languages. Religions practiced in the country are Islam (53%), Christianity (Catholic 20.4% and Protestant 14.4%), and traditional religions (7.4%).

The illiteracy rate in all languages is 44.2% in the general population, 66% for men and 34% for women (EDSTIII, 2004). In the primary grades, the gross schooling rate is 71.6%, 54.6% for girls and 88.3% for boys.

1.1 Water, hygiene and sanitation

Chad is a country in which the sanitary conditions are unsafe because of a lack of potable water. According to EDST II (2004), less than one-third of the population (31.3%) has access to potable water and 11.1% of the population uses surface water (rivers and marshes).

The population lives in unhealthy sanitary and hygiene conditions. According to the Multiple Indicators Study (MP, 2000), the majority (71.3%) of the population does not have toilets. Only 24.6% of the population has an adequate system for removing excrement, of which only 0.2% has modern toilets.

2.3. Administrative and political conditions

Chad's administrative organisation is marked by a significant centralization of State services in the capital, especially decision-making bodies and social and health infrastructures. Since 1996 Chad has opted for a single decentralized State. The process of decentralizing and de-concentrating services out to the regions and *départements* is already under way, with the setting up of a ministerial department in charge of decentralisation.

The country is divided into 18 administrative regions, including the capital N'Djaména, 57 *départements* and 245 sub-prefectures.

Chad entered a new era in 1990 devoted to priming a democratic process, which has led to the emergence of several political parties, civil society associations and freedom of the press. The recent agreement signed in August 2007 between the Government and opposition parties for new transparent elections in the future bodes well for good governance and for the peaceful development of Chad.

2.4. Economic conditions

Chad is one of the poorest countries in the world. From independence to the recent past, economic growth in the country has always been limited by the inherent production weaknesses in the primary sector, in which nearly 80% of the active population operates, the practical non-existence of a processing sector, climatic variables, by being landlocked, and so forth.

Yet it does have significant potential to promote its socio-economic development (arable land, water, pasturage, mining resources including petroleum, etc.).

Since 1994 the Government has been involved in a vast program of structural and institutional reforms through structural adjustment programmes supported by the Enhanced Structural Adjustment Facility (ESAF) and the Poverty Reduction and Growth Facility (PRGF). So in the 1994-2000 period, the GDP to constant price increased an average of 2.6% annually. Exceptional growth rates were recorded beginning in 2001 due to investments by the consortium to begin exploiting petroleum resources. The actual growth in GDP exceeded 10.4% in 2001 and 15.4% in 2003. GDP growth rates outside the petroleum sector are lower.

According to the National Institute for Statistics of Economic and Demographic Studies (INSEED), prospects for growth are not optimistic as investment in the petroleum sector is ending and the impact of public investments to launch other private sectors is low. Because of the structural fragility of the Chadian economy, the economic outlook for the economy to actually take off is unfavourable, except for the petroleum sector.

The State's general budget revenues have clearly increased since 2004 thanks to the direct petroleum revenues. Indirect petroleum revenues were added beginning in 2006 (taxes from the consortium), with a peak in 2007. Direct petroleum revenues will decrease in the future with the expected decrease in production, and indirect revenues will fall beginning in 2008 (instalment system). The 2007 budget surplus will be used to make up for the decreased revenue expected in 2008-2009, to maintain the level of expenditures in the priority sectors.

The tax revenues for the State will be substantially increased in 2007 and should be stable in 2008 and 2009 thanks to the mechanisms for stabilising petroleum revenues that were put in place at the end of 2006 with the assistance of the lending community.

According to INSEED, annual per capita income was (US\$ 389.80) in 2005. The results of the Survey of Consumption and the Informal Sector (ECOSIT I) show that more than 52% of the population lives below the poverty line (less than one US\$ per person per day). Gross Domestic Income (GDI) was estimated to be 3108 billion CFA francs in 2005.

Table 2: Annual change in GDP and income per capita

Indicators	Years				
	2001	2002	2003	2004	2005
GDP per capita (thousands of FCFA)	16.4	175.0	188.1*	250.8*	636.54*
Annual income per capita in US\$	228.9	226.2	299.5*	359*	389.8*

Source: INSEED, April 2005 (* Estimate)

This growth was pulled up by significant investments, especially in the petroleum sector in Doba in the period under review. In fact the overall investment rate rose from 15.2% in 2000 to on average 45% between 2001 and 2003, for an average public investment rate of 5.9%. However national savings, which had grown by 7.6% in 2000, fell considerably (-28.9% in 2002 and -4.2% in 2003).

Average sectors contributions to growth in the 2000-2003 period were, respectively, 42.6% for primary (especially agriculture and herding), 12.9% for secondary and 44.5% for tertiary

(predominantly commerce and administration). The average inflation rate was 4.8% in the 2000-2003 period. It went from 3.4% in 2000 to 12.4% in 2001, falling to -1.8% in 2003.

During this period local State revenues represented an average of 8% of the GDP, versus an average of 20% of public expenditures. At the same time, the average running budget deficit for the State was 1.5% of GDP.

The overall balance of payments was 6.6% in 2000 and became deficit by an average of 5.3% during this period. Exports represented 16.4% of GDP, compared to an average of 67.2% for imports and a goods and services export/import ratio only averaging 29.5% because of the high volume of imports related to the Doba petroleum investments between 2001 and 2003. Outstanding debt averages 61.5% of GDP, 400% of exports and 484% of budget revenues; 14% of budget revenues go to servicing the debt.

2.5. National Poverty Reduction Strategy

The failure by the structural adjustment programs has led to thinking about a new form of development that the International Monetary Fund (IMF) and the World Bank (WB) are proposing to support. The IMF's PRGF stated in the IPTE, and the WB, provide poverty-reduction strategies as a basic framework for mobilising partner support in the development efforts of the countries concerned to help lift their populations out of poverty.

Following the Geneva Round Table IV (1998), sector consultations led to programmes being developed that are centred on poverty in the priority sectors (Education, Health and Social Affairs, Rural Development, Infrastructure), creating a solid base for developing the National Poverty Reduction Strategy.

The concrete commitment by the Government as part of the IPTE has led to the development of a National Poverty Reduction Strategy Document (DSRP), adopted in June 2003 for Horizon 2015. The DSRP revolves around five strategic arms, i.e.:

- 1 Promoting good governance;
- 2 Ensuring strong, sustained growth;
- 3 Developing human capital;
- 4 Improving conditions for vulnerable populations;
- 5 Restoring and safeguarding ecosystems.

Chad entered the group of petroleum-exporting countries in 2004, which offers it the chance to create a sustainable higher growth rate and to reduce poverty through the judicious use of its petroleum resources and other resources, which will be freed up through debt relief. With the start of the petroleum industry and application of the legal provisions for managing petroleum revenues, budget credits allocated to priority sectors increased sharply beginning in 2004. Despite a relatively unsatisfactory execution of the budget, overall we note a clear progression in the composition of public expenditures towards priority sectors (health, education, rural development and infrastructure), which represented 53% of expenditures in 2005 versus 50% in 2004 and 46% in 2002-2003.

2.6. National Population Policy (PNP)

In 1994 Chad adopted the Population Policy Declaration (DPP) that came out of the international conference on population and development (Cairo, 1994). Since then, the country has developed and implemented a National Population Policy, based on the principle that population problems are in large part the result of the choices, attitudes and behaviours made by individuals, couples and families, which often translate into terms of education, health, housing and employment issues.

The government undertook several actions to take control of these needs, which nonetheless remain problematic.

Chad's national policy initially targeted 5 general objectives:

- 1 Providing better alignment of population growth, available resources and socio-economic development in the country;
- 2 Helping to improve the population's general state of health, giving particular attention to reproductive health and to the fight against STI/HIV/AIDS;
- 3 Eliminating all forms of discrimination against girls and women and other vulnerable populations;
- 4 Ensuring human resource development;
- 5 Ensuring balanced spatial distribution of the population in the political management of the country.

In 2001 implementation of the DPP was assessed. This showed that government actions such as developing and enacting legal texts, informational and awareness actions about the rights of women and children or strengthening women's economic capacities were the most successful. This assessment allowed us to readjust both the objectives and strategies of the National Population Policy, and the revised policy was adopted in 2007.

II. ANALYSIS OF HEALTH CONDITIONS

2.1 National health policy

The national health policy revised in 2006 was adopted in May 2007. It notes the inadequate response to health problems in the populations. These problems are characterized by:

- 1 High mortality, especially among women and children;
- 2 High prevalence of endemic and epidemic diseases, including malaria, acute respiratory infections, tuberculosis and other vaccine-preventable diseases, HIV/AIDS, diarrhoea, and malnutrition;
- 3 The emergence of non-transmissible diseases.

The objective of the National Health Policy is to improve the health of populations by reducing morbidity and mortality, especially in the most vulnerable groups, thus helping reach the Millennium Development Goals by 2015, especially MDG 4 and 5.

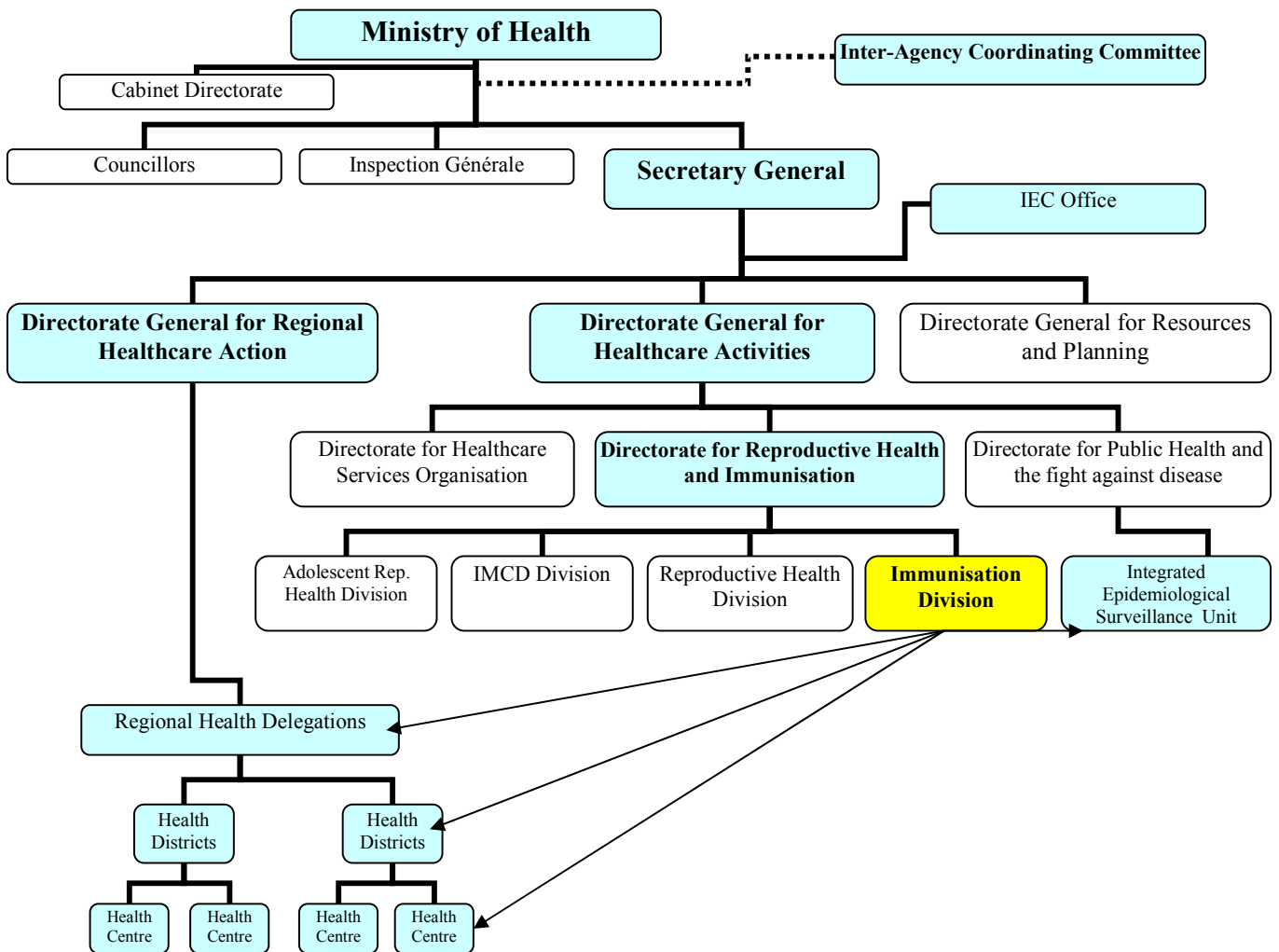
The strategic arms of Chad's health policy that directly relate to the immunisation system are:

1. Strengthening organisation and management of the national health system;
2. Improving access to and availability of quality healthcare services;
3. Strengthening interventions against main diseases;
4. Improving the quality of healthcare services for women and children;
5. Rational development and management of healthcare resources;
6. Expanding partnerships in the healthcare sector.

2.2 Healthcare system in Chad

As part of the healthcare system reform and decentralisation, decree no. 360/PR/MSP/2006, containing the organisational chart of the Ministry of Public Health, describes the organisation of Chad's healthcare system as shown in the diagram below:

Figure 1: MOPH organisation chart



The healthcare system in Chad, which includes both public and private facilities, is a pyramid with three (3) levels of responsibilities and activities:

2.2.1 Central level:

The role of the central level is to design and direct the national healthcare policy. It is responsible for drawing up healthcare policies, coordinating foreign aid, and supervising, assessing and controlling implementation of national programmes. It includes:

- A National Healthcare Council;
- A central administration;
- Administrating authorities;
- National-level healthcare institutions (National Reference General Hospital, Pharmaceutical Clearinghouse, National College of Healthcare and Social Agents, etc.).

In defining strategies to fight disease, 18 vertical programs were created, including the Expanded Programme on Immunisation (EPI).

2.2.2 Intermediate level:

The intermediate level is in charge of coordinating the implementation of national policies and of adapting them to local realities, and of providing technical support to the health districts.

The level of each of these 18 regions in the country comprises:

- ☞ Regional Healthcare Councils;
- ☞ Regional Healthcare Delegations;
- ☞ Regional Public Hospital Institutions and Regional training schools in some regions;
- ☞ Regional Procurement Pharmacies.

2.2.3 Peripheral level:

The peripheral level is comprised of 56 functional healthcare districts spread throughout the 18 regional healthcare districts. It is the driver of the system, and is in charge of operational implementation of policies based on specifications for each level:

- ☞ Minimum Package of Assistance (PMA) at the healthcare centres;
- ☞ Supplementary Package of Assistance (PCA) at the district hospitals.

The healthcare district covers a population that varies between 100 000 and 250 000 inhabitants. It is divided into several zones of responsibility (ZR). The district has a hospital (2nd tier) where the Supplementary Package of Assistance (PCA) is offered. Each zone of responsibility provides healthcare coverage for a population of approximately 10 000 inhabitants and comprises at least one Healthcare Centre (CS) (1st tier), which offers a Minimum Package of Assistance (PMA) that meets the essential, most common needs of the population. Immunisation is provided at this level (CS).

The healthcare districts comprise:

- ☞ District Healthcare Councils;
- ☞ District Management Teams (ECD);
- ☞ District Public and Private Hospital Institutions;
- ☞ Healthcare Centres;
- ☞ Healthcare Councils for the zones of responsibility.

2.3 Involvement of the private and religious sectors

The private sector is diverse and dynamic. It includes for-profit medical offices, clinics and hospitals, and religious non-profit clinics and hospitals. These healthcare facilities help the Ministry of Public Health attain its objectives. Private healthcare facilities are required to follow the healthcare standards and procedures set forth by the Ministry of Health. Religious hospitals, which are certified as district hospitals, send statistics about healthcare services to the Ministry of Health every month, and are subject to period control checks by the Ministry of Health. In 2005, 22% of the healthcare centres and eight hospitals across the country were private religious institutions.

2.4 Health problems in the population (epidemiological profile)

The epidemiological profile for Chad is characterized by a prevalence of endemic and epidemic diseases, including malaria, acute respiratory infections, diarrhoea, measles, tuberculosis and HIV/AIDS, as well as non-transmissible diseases like malnutrition. These diseases are the primary causes of morbidity and mortality. They particularly affect children and women, the most vulnerable population groups.

Note that **“One child out of five dies before reaching his 5th birthday”**, most from preventable causes. Despite significant immunisation efforts, vaccine-preventable diseases are still regularly reported by the epidemiological surveillance service:

Diarrhoea is one of the top five reasons care is sought at healthcare facilities and is closely related to poor individual and collective hygienic conditions. More than 114 000 cases were recorded in 2005, of which nearly 38 000 (or 35%) were in children under 1 year of age.

Acute respiratory infections (155 000 cases reported in 2005) are another major cause of morbidity and mortality for children under age 5.

Malnutrition severely affects children 0-5 years of age (more than 500 000 cases in 2005).

Malaria is a major public health problem in Chad and remains the number one cause for visits to healthcare facilities. In 2005, malaria alone accounted for 22.4% of visits, with a mortality rate of 7% to 12%.

AIDS has been under increasing epidemiological surveillance since a national program to fight this scourge was put into place. HIV incidence in Chad is 3.3%. This rate hides significant disparities between the urban and rural environments (7.0% in rural areas versus 2.3%) and between the sexes (4% in women versus 2.6% in men). AIDS is a health problem, but also and especially a social and economic problem.

Conditions are not favourable for the health of pregnant women. Maternal mortality is particularly high in Chad: the rate is estimated to be 1 099 deaths per 100 000 live births.

The main causes for these numerous maternal deaths are dystokia and complications from abortions, puerperal infections, postpartum haemorrhage, and pregnancy-related hypertension.

2.4.1 Problems with the national healthcare system:

Weaknesses in the healthcare system's response to the population's health problems, which were highlighted in the assessment of the 1998-2001 national health policy implementation, are associated to organisation, operation and management of the public sector, to healthcare offerings, to a lack of human resources and medications, to insufficient health funding, and to socio-economic, cultural and environmental factors.

2.4.2 Problems related to organisation

At the central level, weaknesses were observed in the design and programming of strategic plans. They related to:

- 1 Insufficient capacities for planning, coordination, monitoring and supervision;
- 2 Insufficient allocation of resources, especially human and financial;
- 3 Insufficient formulation and implementation of national strategies;
- 4 Insufficient implementation of the decentralisation process;
- 5 Poor circulation of information;
- 6 An existing and increasing black market for medicines.

At the intermediate level we noted insufficiencies in support for Management teams in coordinating, monitoring and implementing healthcare policy.

At the peripheral level we noted that some districts and some care facilities were not operational.

2.4.3 Problems related to care-giving

Insufficiencies in access, availability, utilisation, coverage and quality of care have been observed (EDST 2004 and MOPH Health Statistics Directory 2005).

These insufficiencies are due to:

- Low coverage in healthcare facilities;
- Inadequate technical support centres in healthcare facilities;
- Low functionality of the reference and counter-reference mechanism and system;

- Frequent shortages of Essential and Generic Medicines (MEG), vaccines, anti-retrovirals (ARV) and contraceptives;
- Irrational use of medicines at all levels of the healthcare system;
- Socio-cultural burdens on the use of healthcare services;
- Insufficient communication means;
- Non-compliance with service standards and procedures by private and religious healthcare facilities;
- Poor storage conditions for medicines, including vaccines.

2.4.4 Problems related to human resources development

Access, availability and quality of healthcare are particularly linked to the availability, quality and motivation of human resources. The public health sector in Chad suffers from a double deficit – quantitative and qualitative – in human resources, and from a poor distribution of available personnel. This poor distribution is more marked for some categories, notably midwives.

In the 2005 survey (DSIS, 2005), there was 1 doctor for every 27 680 inhabitants, 1 nurse for every 6 453 inhabitants and 1 midwife for every 9 074 women of childbearing age. The survey showed 1 nurse for 2 850 inhabitants and 1 midwife for every 1 192 women of childbearing age in N'Djaména, versus 1 nurse for 18 799 inhabitants in the Chari Baguimi region and 1 midwife for 66 866 in the Mandoul region.

The main causes for this situation are:

- Poor staff management;
- Insufficient recruitment quota in the Public Services granted by the State;
- Insufficient credits allocated to initial and continuing training;
- Non-implementation of the development plan for human resources;
- Non-implementation of regulations by private nurse training facilities;
- Lack of adequate response to urgent personnel needs;
- Low salaries and lack of motivation among agents.

2.4.5 Problems related to material resources

The low functionality of healthcare facilities at the various levels that is linked to insufficient resources considerably limits the health care services offered and affects access, availability and quality of care. The main reported causes are:

- Poor distribution of healthcare facilities;
- Inadequate technical support;
- Disparities between administrative and healthcare divisions;
- Lack of maintenance services for infrastructure and equipment at all levels;
- Insufficient logistics for advanced and mobile strategic activities as well as insufficient supervision;
- Insufficient ambulances to transfer emergency cases.

2.4.6 Problems related to healthcare funding (including coverage of costs)

The healthcare sector draws its funding from several sources. The four primary sources are:

- The State, through the State budget;
- Lenders;
- The populations: they contribute to healthcare funding through cost recovery and by paying for private care;

- NGOs: they provide greater and greater contributions to the sector.

The healthcare sector is poorly funded. Low mobilisation of financial resources from the State, external partners and the community greatly limits the care offered and affects the health of the population.

Despite Chad's commitment to the Abuja principle recommending increasing the portion of the national budget allocated to healthcare to 15%, this number has never reached 10%. In fact, the budget has significantly decreased, from 8.44% in 2003 to 4.2% in 2006 and 5.3% in 2007.

In addition, there is still a significant deficit between the allocated budget and the budget actually executed.

The proportion of external aid compared to the State budget decreased by half between 2004 and 2007 (56% to 27%). The 2007 finance law planned for 9.7 billion FCFA in external aid, with 67% of this in grants and 33% in loans.

The population participates in financing healthcare through cost recovery. This was about 2.133 billion FCFA in 2005, of which 1 474 billion FCFA went to purchase medicine (2005 health statistics directory). The proportion of cost recovery compared to the State budget in 2005 was on the order of 5.86%.

In the 2003-2007 period, the categories that used the majority of the available budget were investments and personnel costs.

III. ANALYSIS OF THE EPI SITUATION IN CHAD

Infant mortality remains quite high in Chad. Most of the time it is due to vaccine-preventable diseases and the absence and/or poor integration of activities.

Following the example of other WHO member countries, the Chad EPI adopted the five (5) operational components, i.e.: (i) providing services; (ii) provisioning and quality of vaccines; (iii) logistics; (iv) surveillance of vaccine-preventable diseases; and (v) advocacy and social mobilisation. These components are supported by capacities management, financing and strengthening.

The goal of the Chad EPI is to reduce the morbidity and mortality from 7 target childhood diseases (tuberculosis, diphtheria, polio, tetanus, pertussis, yellow fever and measles) and to eliminate maternal and neonatal tetanus by immunising women of childbearing age (but actually targeting pregnant women).

3.1 Administrative organisation and management of EPI

3.1.1 At the central level: Creation and mission:

The Expanded Programme on Immunisation (EPI) was created by decree no. 224/ MSP/DG/DGE of 23 May 1984 and became operational on 1 January 1985. It is integrated into various levels of the country's healthcare pyramid. In the new organisation chart, at the central level it is associated with the Department of Reproductive and Vaccine Health (DSRV), which is itself part of the General Directorate of Healthcare Activities (DGAS).

The primary mission of the EPI is to provide technical support to healthcare delegations to implement that national immunisation policy throughout the country. More specifically, the central level of the EPI is in charge of:

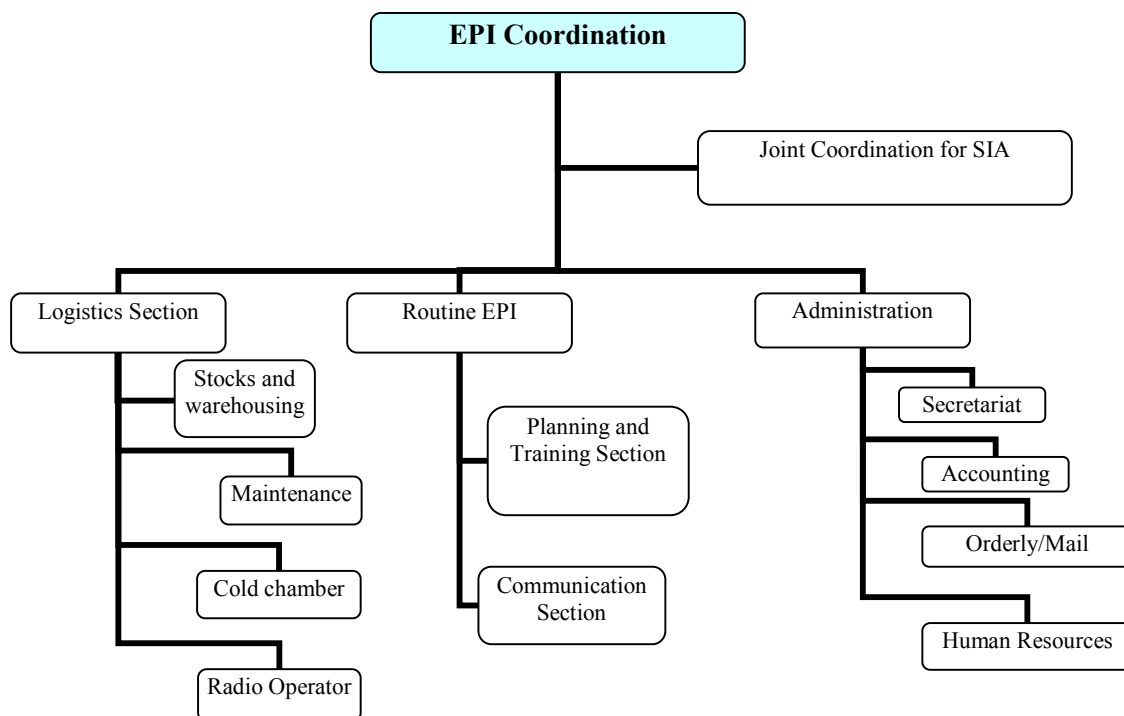
- 1 Providing short- and mid-term strategic planning
- 2 Designing and distributing strategic documents and guidelines
- 3 Preparing items for advocacy and resource mobilisation, and making these available at the intermediate level
- 4 Providing formative supervision and monitoring of immunisation activities in the districts

- 5 Providing continuing training for management teams at the intermediate and peripheral levels

The institutional level of the EPI is still quite low in the new MOPH organisation chart. This does not facilitate proper circulation of information to the decision-making level of the hierarchy.

Following is the organisation chart for the EPI Division:

Figure 2: EPI organisation chart



NB: SIA are provided by EPI coordination.

Table 3 below lists the personnel who work for the programme at the various levels.

Table 3: EPI technical personnel

Level	Structure/Service	Responsible party profile	Staff	Comments
	Coordination	Pub. Health physician, Epidemiologist	2	Fulltime
	Routine immunisation	General physician Senior technician Health technical officer Technician/Sanitation	1 1 1 1	Fulltime
	Logistics section	Logistician State-certified nurse Health technical officer Maintenance officer Radio operator	1 1 1 3 1	Fulltime
	Communication	State-certified nurse Technician Sanitation	2 1	Fulltime

	Administration	Administrator Accountant Secretary Drivers Orderly Site guard	1 1 1 2 2 1	Fulltime
Subtotal, Central level			24	
	Health delegate	Pub. Health physician or Physician	18	Part-time
	EPI focal point	Nurse/	18	Part-time
	Communication	Nurse/	18	Part-time
	Administration	Manager	18	Part-time
	Head district physician	Physician	56	Part-time
	EPI focal point	Nurse/Technician Sanitation	56	Part-time
Health centres	Regional Health Centre	Nurse	639	Part-time

3.1.2 Operational organisation of EPI:

Depending on their level within the healthcare pyramid, some EPI activities at the intermediate and peripheral levels are conducted by full-time staff (regional supervisors) and others by part-time staff, integrated into existing structures (chief physician, nurses and other staff in immunisation positions). Unfortunately, at the peripheral level where immunisation is provided, there are zones of responsibility that are not yet covered by healthcare centres (639/874), for healthcare coverage of 73%.

3.1.3 Capacity strengthening:

As part of implementing the strategic plan for training drawn up in 2002, the following have been realized:

- 1 Adaptation of the MLM modules and training of 13 central and regional trainers;
- 2 Training of 42 regional and district trainers in RED approach management;
- 3 18 Regional Healthcare Delegates were also trained in the use of the self-assessment tool for immunisation data quality (DQS).
4. 233 out of 1 198 immunisation agents.

As part of integrating the EPI management course into the curriculum of health schools, teachers and professors have been trained in EPI management. However, the introduction of these modules into the training program has not yet been effective.

The EPI guidelines and directives on the policy of open vials, injection safety and complying with the vaccine schedule have been widely distributed to service providers to support the efforts made in the continuing training of personnel.

However, we note that the weakness in teaching EPI in health schools is still seen in newly recruited personnel. This is why continuing training has such an important position in the programme interventions; these problems need to be alleviated.

In addition, the mobility of personnel (assignment, studies) destabilizes the balance between the various levels.

3.1.4 EPI planning system

The EPI planning system in Chad follows a bottom-up scheme:

In the responsibility zones (most peripheral operational level), the micro plans are prepared by the health committees, which are comprised of community representatives (COGES) and the health centre team.

At the district level, the micro plans for the zones of responsibility are created by the district management team. This results in the preparation of a district operational plan. This plan is submitted for approval to the District Health Council chaired by the prefect of the administrative *département*.

At the regional level, a summary is made of the district operational plans as well by the framework team of the regional health delegation. The delegation's action plan that comes out of this summary is submitted for approval to the Regional Health Council, chaired by the Governor of the region.

At the central level, the regional action plans are considered when the annual EPI action plan is prepared. The Technical Committee finalises this plan and submits it to the ICC for approval.

The zones of responsibility and the districts supported by the RED and SASDE approaches routinely prepare their micro plans and operational plans. However, the zones of responsibility and the districts that do not receive similar support do not all manage to create this work tool.

3.1.5 Programme monitoring and supervision

The EPI organizes monitoring activities as follows: monthly data collections of vaccine coverage, vaccine/consumable stock management and monitoring are conducted daily by phone. Tools are designed for this purpose that allow the data to be analysed by district to ensure that feedback is provided in the monthly feedback information bulletin.

Since most of the health centres and some of the districts do not have radiotelephony, the programme has experienced some difficulty collecting data in a timely fashion. Similarly, obtaining complete data has been quite delayed.

For supervision, the EPI organises formative supervision missions for health region and district management teams. To improve the quality of such supervision, the EPI Technical Committee designed and set up supervision tools that allow actors in the field to conduct quality supervision as part of the Reach Every District approach.

These tools are not used routinely in all districts; with the extension of the RED approach in all districts of the country the quality of supervision will be emphasized.

Monitoring meetings for EPI activities (Assessment workshops) are planned with the DSR. These meetings only occur sporadically for financial reasons, however.

3.1.6 EPI Inter-Agency Coordination Committee:

The Inter-Agency Coordination Committee of the EPI was set up in 1997 by a Ministry of Health decree. Its mission is to approve the EPI's annual action plan, including the projects to organise National Immunisation Days and to strengthen epidemiological surveillance; and to coordinate the interventions among the different partners on the one hand, and between the partners and the EPI's national structures on the other hand. The committee is also responsible for mobilising the necessary resources to conduct EPI activities and to evaluate the execution of action plans, and to implement these various issues. It is chaired by the Minister of Health or his representative, and meets once per quarter in ordinary session. These meetings are not held regularly because of agenda constraints.

The EPI Technical Committee is in charge of providing regular monitoring of EPI activities, providing technical support to EPI coordination and preparing programme documents.

3.2 Routine immunisation services

The 2003-2007 multiyear plan set the following % coverage objectives (refer to Table 7):

Table 4: Review of vaccine coverage objectives in % EPI Chad 2003-2007

	2003	2004	2005	2006	2007
BCG	54	64	74	81	85
DTP3	37	47	57	64	70
Polio	37	47	57	64	70
MCV	41	51	61	68	73
YF	41	51	61	68	73
TT 2+	40	50	60	67	72

Table 5: Target populations 2003-2007

	Objectives				
	2003	2004	2005	2006	2007
Total infants (target pop.)	294 964	302 340	309 898	317 675	325 547
Infants to immunise with 3 doses of DTP	109 137	142 100	176 642	203 312	227 883
Infants to immunise against yellow fever	92 588	180 251	203 783	201 113	196 298
Pregnant women to immunise with TT+	117 986	151 170	185 939	212 842	234 394

Chad's total population is estimated to be 9 044 042 in 2007 (source: DCAP/Min Plan). The target population for routine EPI to be protected against vaccine-preventable diseases was made up of children under one year of age (3.6%) for seven antigens (BCG, DTP, OPV, MCV and YF) and women of childbearing age (22.8%) for TT until 2006.

Since 2007, however, for operational reasons, the target for TT is pregnant women (4.1%), in accordance with the note from the Secretary General of the Ministry of Public Health. Women of childbearing age will be the subject of SIA, in accordance with the plan to eliminate MNT.

The current immunisation schedule is given in the table below:

Table 6: Vaccine schedule for children and women

Antigens	Doses	Age of administration	Administration site	Route of administration
BCG	0.05	Birth	Outer upper left forearm	Intradermal
OPV	2 drops	Birth; 6, 10, 14 weeks	Mouth	Oral
DTP	0.5 mL	6, 10, 14 weeks	Rear outer mid-thigh	Intramuscular
YF	0.5 mL	9–11 months	Outer upper third of left and right arms	Subcutaneous
MCV	0.5 mL	9–11 months	Outer upper third of left and right arms	Subcutaneous
TT1	0.5 mL	Pregnant women	Outer upper third of left arm	Subcutaneous

TT2	0.5 mL	1 months after TT1	Outer upper third of left arm	Subcutaneous
TT3	0.5 mL	6 months after TT2	Outer upper third of left arm	Subcutaneous
TT4	0.5 mL	1 year after TT3	Outer upper third of left arm	Subcutaneous
TT5	0.5 mL	1 year after TT4	Outer upper third of left arm	Subcutaneous

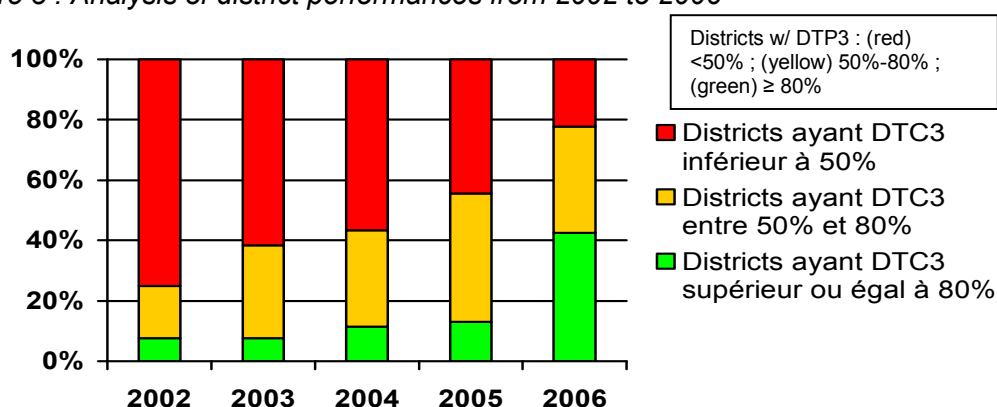
The Expanded Vaccination Programme and the responsible parties at various levels of the healthcare pyramid make every effort to ensure that the target population is immunised, despite geographic difficulties (isolated, lake or marsh regions). Immunisation is an essential component of the Minimum Package of Assistance (PMA) and the Supplementary Package of Assistance (PCA):

- ☞ The fixed strategy is provided to the population living within 5 km around health centres;
- ☞ The advanced strategy is provided to populations living between 5 and 10 km from a health centre.
- ☞ The mobile strategy is provided by the management team for the district in zones of responsibility that are not covered.

In order to improve the performance of districts, in 2004, the MoPH began implementing novel strategies with partner support. These include:

- ☞ The “Reach Every District” (RED) approach in the 18 initial Districts, then in 30 DS in 2006. This approach will be expanded to all Districts in 2008;
- ☞ The “Strategy for Accelerating Survival and Development of Children” (SASDE). This approach was successfully implemented in 3 Districts in 2003 and consists of participatory planning, which at the end a performance contract engages all actors (communities, healthcare personnel, administrative and traditional authorities and local partners) to make a commitment to reach the objectives they set;
- ☞ The integration of child survival activities (vitamin A, Mebendazole and ITMs);
- ☞ The acceleration of routine EPI

Figure 3 : Analysis of district performances from 2002 to 2006



By combining these activities we were able to improve vaccine coverage, per the table below. The table below summarises trends in vaccine coverage from 2002 to 2006.

Table 7: EPI vaccine coverage trends, 2002-2006 (Source: DSIS)

Antigens	2002	2003	2004	2005	2006
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BCG	67%	72%	38%	71%	93%
Polio3	40%	48%	47%	58%	73%
DTP3	40%	47%	50%	57%	77%
MCV	55%	61%	56%	70%	81%
YF	52%	40%	49%	63%	73%
TT+2*	14%	10%	14%	16%	60%**

*The denominator is made up of women of childbearing age.

** The denominator is made up of pregnant women.

Coverage objectives improve from one year to the next, thanks to a combination of the three strategies. However, these results remain tenuous and low compared to GIVS.

The analyses of district results show that their performance is progressing quite slowly. We further note that in 2006 twelve districts still had DTP3 coverage rates below 50%. Only 43% of the districts had achieved the 80% performance level (GIVS) (refer to Table 10).

Table 8: Estimate of DTP1-DTP3 and BCG-MCV drop-out rate from 1997 to 2006

Drop-out rate	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
DTP1-DTP3	45%	43%	40%	43%	34%	40%	37%	26.3%	31%	21%
BCG-MCV	33%	18%	15%	32%	18%	40%	34%	-31%	19%	17%

No structured study has been conducted to determine exactly what proportion of children is lost by the system before being completely immunised. However, a comparison of BCG, MCV and DTP coverage levels indicates that a significant proportion of children have had a least one opportunity to come into contact with the immunisation system, but did not continue with immunisation through the third dose of DTP (DTP3). The drop-out rates are estimated in the table below /sic/:

The drop-out rates remain quite high. Note that the local population's perception of the severity of measles and the frequent occurrence of epidemics related to the fact that the BCG-MCV vaccine is given in one dose could explain why the drop-out rates for BCG-MCV are lower than for DTP1-DTP3.

3.3 Surveillance and trends in EPI target patients.

In 1998, the Minister of Public Health decided to create the National Service for Integrated Epidemiological Surveillance (SSEI), which is responsible for collecting and analysing the data for diseases under surveillance, including AFP, maternal and neonatal tetanus (MNT), measles, yellow fever, cholera, meningitis and avian flu.

The system cannot yet detect deaths that occur outside healthcare facilities, and improvements in complete and timely information are needed.

The table below describes performance in terms of vaccine-preventable diseases.

Table 9: Performance indicators of AFP surveillance

Years	Report ed cases	AFP cases w/ monitoring exam	Cases with stools w/in 48h	AFP cases investigated	% AFP w/ 2 stool specimens w/in 14 days	No. of confirmed polio cases	Rate of non-polio AFP per 100 000 children under 15 yrs
1997	ND	ND	ND	3	ND	1	ND
1998	ND	ND	ND	15	ND	3	ND
1999	155	32%	57%	155	36%	35	1.1

2000	104	57%	72%	104	38%	4	1.16
2001	143	79%	86%	143	52%	0	1.2
2002	89	72%	87%	89	71%	0	1.6
2003	93	35%	88%	93	74%	25	1.3
2004	124	78%	91%	124	73%	24	1.7
2005	164	88%	92%	164	89%	2	3.45
2006	126	100%	94%	126	94%	1	2.57

Source: SSEI

Performance indicators from the surveillance of AFP cases (Table 9) have improved, especially in 2005 and 2006, proving the system's capacity to detect cases of polio.

Analysis of polio surveillance data show that transmission of the virus has not been cut, despite the many immunisation campaigns conducted for this very purpose.

In fact 5 new cases of WPV were confirmed in the first 8 months of 2007.

The weakness of routine EPI and the poor quality of immunisation campaigns compromise efforts to eradicate polio from Chad. This situation is aggravated by proximity to Nigeria in which it is endemic.

Case-by-case surveillance of measles was begun in 2006 following catch-up immunisation campaigns organised from May 2005 to January 2006. The laboratory at the N'Djamena National Reference General Hospital (HGRN) analysed the serum specimens.

The analysis of active surveillance indicators for measles in 2006 indicated that 26% of the health districts reported at least one case of measles with serum specimen. The annualised investigation rate is still low, both at the national (0.7%) and regional levels.

Active surveillance of yellow fever started at the same time as for measles. The Institut Pasteur in Dakar analysed 54 specimens taken in 2006.

In 2006, 31% of the health districts reported at least one suspected case of yellow fever with serum specimen. The annualised investigation rate is still low, both at the national and regional levels. No IgM-positive cases of yellow fever have been detected to date.

Active surveillance of case-based neonatal tetanus has not yet been conducted. However the data collected by the health information system (Ministry of Public Health 2005 statistics directory) indicate that no district has eliminated MNT.

Table 10: Morbidity and mortality trends in target EPI diseases (2002-2006)

	2002		2003		2004		2005		2006	
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths
Measles	7636	ND	15717	288	12235	ND	22216	516	1 590	39
NNT	509	ND	412	131	485	ND	364	80	91	30
Polio*	39	0	34	0	54	0	2	0	1	0
Pertussis	2413	ND	ND	ND	2413	ND	ND	ND	ND	0
Yellow Fever	ND	ND	0	0	ND	ND	0	0	0	0

Source: Chad health statistics directory (DSIS)

The target EPI diseases are reported in Table 10 above. The various additional immunisation activities to combat measles conducted throughout the country caused a decrease in the incidence of this disease in 2005 and 2006.

The following weaknesses have repercussions on the quality of the epidemiological surveillance data:

- Lack of training for health agents on epidemiological surveillance, notably in case definition;
- Lack of reporting guidelines and materials for cases in most of the health centres;
- Insufficient supervision of the surveillance system;
- Biological surveillance is still in the starting stages, and only measles surveillance is performed across the country;
- Insufficient communication means.

3.4 Analysis of global initiatives

3.4.1 Eradication of Polio

Chad subscribes to all of the resolutions to eradicate polio. It concretely committed to the process with the organisation of the first National Immunisation Days (JNV) in 1996. Since then, JNV have been organized every year, with vitamin A added in 2000.

Since 2004, Supplemental Immunisation Activities (SIA) have gradually improved, leading to the current results, despite the fact that Chad has remained endemic. Regular assessments have shown evidence of recurring problems, such as poorly-immunised zones and children who were missed.

Notification of observed cases has been rare since 2006, leading the MOPH to put forth a response plan with the support of its partners: The 2004 micro plans were revised to reflect the current situation of the districts, and these measures were used for the response 1 month after confirmation of the case.

3.4.2 Status of the fight against vitamin A deficiency

Vitamin A deficiency in Chad is widespread and poses a serious public health problem, especially in children ages 6 months to 5 years. This deficiency is often associated with malnutrition, whose underlying causes are difficulty obtaining food, inadequate care provided to women and children, and difficulty accessing quality healthcare and healthy environment.

Strategies to fight this have been implemented and are contained in the national nutrition policy adopted in 1999.

3.4.3 Strategies for fighting vitamin A deficiency

The battle against vitamin A deficiency is based on two strategies in the short-, medium- and long-term:

- 1 Supplements or periodic distribution of supplemental doses of vitamin A to vulnerable groups (young children aged 6 months to 5 years, preschool-age children living in high-risk areas, nursing mothers during the four weeks following birth, and sick children).
- 2 Promotion of breastfeeding and diversifying diet from local foods, as well as promotion of food safety in households and nutritional education to sustain vitamin A correction;
- 3 Enrichment of foodstuffs that are regularly consumed with vitamin A is a long-term strategy.

Since 2000, children aged 6 to 59 months receive adequate doses of vitamin A each year as part of the JNV opportunity. This approach allows us to reach 90.1% of children, 81%, 81% and 95% respectively in 2002, 2003, 2004 and 2005.

The tables below summarize trends in vitamin A coverage from 2000 to 2005.

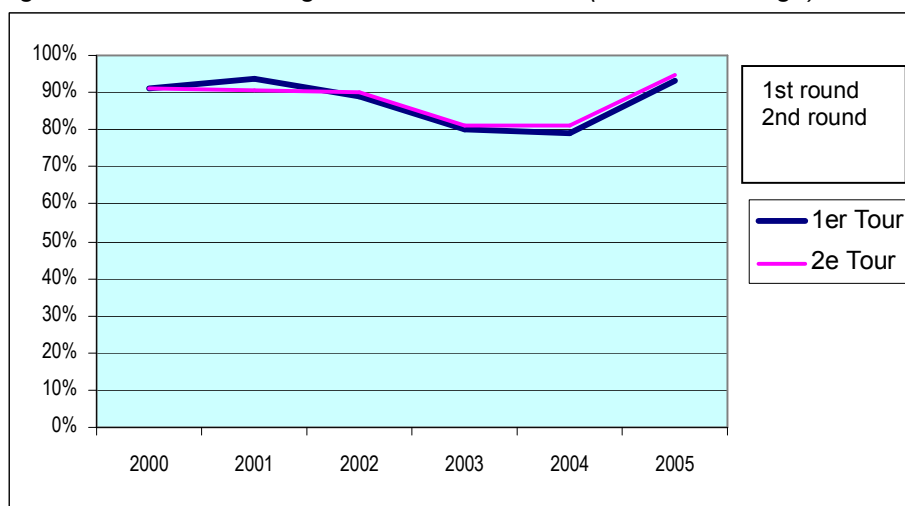
Vitamin A supplements combined with Mebendazole or insecticide-treated mosquito nets is continuing in Chad during SIA or as part of integrating routine immunisation activities.

Table 11: Vitamin A coverage (2 rounds) from 2000 to 2005 (national average)

ROUND / YR	2000	2001	2002	2003	2004	2005
1st round	91%	93.55%	89%	80.10%	79.00%	93%
2nd round	91%	90.55%	90.1%	81%	81%	95%

Source: EPI, Nat'l Immunisation Days data

Figure 4: Change in vitamin A coverage from 2000 to 2005 (national average)



Source: EPI, Nat'l Immunisation Days data

3.4.4 Controlling measles

Measles is one of the deadliest childhood diseases that continues to ravage Chad. Recall that the number of cases reported is lower than the actual number of cases, since at the current time the surveillance system cannot detect all cases, which are significantly increasing (see table above). Vaccine coverage of measles exceeded 50% over the past five years. Chad adopted a multiyear plan to fight measles for the 2004-2008 period.

An additional mass immunisation campaign was organised in 2005-2006 by the regional bloc across the country (see table below). The target group for this campaign was children under 9 months to 14 years. Coverage during these campaigns varied from 45% (BET) to 109% (Mayo Kebbi Ouest).

The follow-up campaign is planned for 2008.

Table 12: Summary of campaign results by region

REGIONS	TARGET POPULATION	CHILDREN IMMUNISED	COVERAGE RATE	WASTAGE RATE	AEFI CASES
BATHA	178483	152811	86%	2%	-
BET	63178	28617	45%	ND	-
CHARI BAGUIRMI	339406	328661	97%	3%	-
GUERA	189470	185598	98%	3%	-
HADJER LAMIS	312744	267756	86%	4%	-
KANEM	288904	274810	95%	7%	-
LAC	173160	163943	95%	3%	-
LOGONE OCCID	315753	317366	101%	3%	1
LOGONE ORIENT	364347	367202	101%	2%	2
MANDOUL	250804	262592	105%	4%	-
MAYO KEBBI EST	332571	333527	100%	3%	3
MAYO KEBBI OUEST	243879	266795	109%	3%	-
MOYEN CHARI	261964	253885	97%	4%	-
N'DJAMENA	802560	519945	65%	4%	-
OUADDAI	345714	341120	99%	4%	-
SALAMAT	106118	110793	104%	4%	-
TANDJILE	307699	309341	101%	3%	-
WADI FIRA	195200	190272	97%	6%	1

3.4.5 Elimination of neonatal tetanus

Efforts to eliminate MNT in Chad have been hindered for several reasons, including:

- 1 Poor vaccine coverage of women of childbearing age;
- 2 Poor health coverage and insufficient qualified human resources;
- 3 Low rate of prenatal care and assisted births;
- 4 Lack of response to cases of MNT.

A detailed analysis of the cases of MNT in 1999 showed that all districts in the country were at a high risk for neonatal tetanus, with 26 out of 47 operational districts showing an incidence greater than 1 case per 1000 live births.

A pilot plan to eliminate MNT was prepared in 2000, and it was implemented first in the prefecture of Tandjilé. This plan was updated in the strategic plan in May 2002 for a four-year period (2003-2006). The 2006 assessment showed that all districts are still at high risk, although some progress has been made.

Between 2003 and 2005 three SIA were organized in 11 health districts. Overall, the results from these 3 rounds of SIA/MNT were quite encouraging, although the 3rd round occurred late for reasons that are well known (shift of priorities with the epidemic of wild polio virus in the country, a lack of funds, and the presence of a large number of refugees in the eastern part of Chad). The

overall coverage rate for the three sessions, or rounds, of SIA/MNT was 141% for TT1, 72% for TT2, and 21% for TT3. The number of low-risk districts went from zero in 2003 to 13 in 2005, with 12 health districts still at very high risk and 29 at high risk in 2005 according to the criteria used. Routine TT2+ coverage of pregnant women was 73% in 2005 versus 66% in 2004, which translates into a net improvement of immunisation services for women. The proportion of children protected at birth is on the order of 29%. While probably underestimated, this remains low.

The Reach Every District (RED) and the Strategy for Accelerating Survival and Development of Children (SASDE), which were to help improve routine vaccine coverage, are just in their beginning stages. Activities integrated into the acceleration of routine EPI bode well.

Activities that were to have contributed to increasing the rate of clean births were weakly executed (insufficient equipment, qualified personnel and supervision).

Active and response-to-case surveillance activities were weakly implemented (delay in training teams and lack of funding).

As the above shows, there are still many challenges to overcome in eliminating MNT in Chad: at least 39% of the districts remain high-risk in 2005.

Given this situation, all of the districts in the country have been rescheduled for campaigns to eliminate MNT, in accordance with the 2008-2011 plan to eliminate MNT.

3.5 Introduction of new vaccines

3.5.1 Viral hepatitis B

Although there are no structured studies that reflect the chronic carriage rate of the Hepatitis B virus in the general population, Chad, like all the other countries in Africa south of the Sahara, is ranked among the countries with high endemicity for viral Hepatitis B. According to its data, the blood bank estimates that the surface antigen is present in 15% of volunteer blood donors. In sub-Saharan Africa, primary cancer of the liver is the leading cause of cancer death among men and the 3rd highest cause among women.

Thus controlling the hepatitis B virus by immunizing infants is extremely important. Therefore, the country plans to introduce the Hepatitis B vaccine in 2008 to prevent hepatic complications caused by this virus, such as cirrheses and primary liver cancers.

3.5.2 Haemophilus Influenzae type b

Chad has no statistical data on the burden of this disease. However, studies performed in four countries of the region (Uganda, Ghana, Niger and the Republic of South Africa) have demonstrated that haemophilus influenzae type b infection causes death in 30 to 70 cases of a population of 100, 000 children under age 5. Children who survive the infection often develop sequelae that last a lifetime (for example mental retardation, deafness, language problems, etc.) that are difficult for the individual and his or her family to manage.

Chad, which subscribes to the recommendation of the WHO Technical Consultative Committee "because of their demonstrated efficacy and safety, conjugated Hib vaccines should be introduced into all childhood routine immunisation programmes", has taken measures to introduce the two new vaccines in 2008 to protect the population against these two diseases (Hib and hepatitis B infection).

3.6 Logistics

3.6.1 Cold Chain

In June 2000 an inventory of the cold chain was conducted, and is updated every year with a plan for rehabilitating the cold chain throughout the country.

The cold chain was upgraded in 2004 at the central level through the acquisition of two cold chambers, 45 m³, of which 20 m³ is negative and 25 m³ is positive.

The rehabilitation plan for this cold chain calls for gradually replacing equipment as the budget allows.

The following points summarize the EPI cold chain situation in Chad at all levels:

The Chad Immunisation Division has two positive cold chambers with a gross capacity of 9 and 25 cubic meters; and one negative cold chamber of 20 cubic meters gross.

In addition to these storage units, the EPI has three sub-national warehouses, each with one cold chamber of 15 cubic meters gross capacity. These sub-national warehouses will be operational before the end of 2007, and have a gross capacity of 15 meters cubed positive volume each.

Table 13 a: Existing cold chain storage volume, central and sub-national

Number of units	Total volume T° positive (litres)		Vol. factor
	Gross	Net	
Two Positive cold chambers	34 000	10 625	3.2
Three Positive sub-national cold chambers	45 000	14 062.5	3.2
TOTAL	79 000	24 687.5	3.2
Total volume T° negative (litres)			
One Negative cold chamber	Gross	Net	
	20 000	6 250	3.2

The following table provides the volumes required.

Table 13 b: Vaccine storage volume

Net storage volume for vaccines (litres)	2008	2009	2010	2011	2012
BCG vaccine	950 L	979 L	1 009 L	1 040 L	1 073 L
Oral polio vaccine OPV	3 552 L	3 318 L	3 292 L	3 206 L	3 306 L
DTP vaccine DTP	2 115 L	0 L	0 L	0 L	0 L

Measles vaccine MCV		1 554 L	1 586 L	1 617 L	1 666 L	1 719 L
TT vaccine TT		4 419 L	4 236 L	4 353 L	4 473 L	4 611 L
Yellow fever vaccine YF		1 110 L	1 133 L	1 155 L	1 190 L	1 228 L
Pentavalent vaccine DTP-Hep B-Hib		5 955 L	13 509 L	14 243 L	15 494 L	15 984 L
Supply frequency (No. of supplies per year)		2	2	2	2	2
Net storage vaccine volume in positive CC (litres)		10 065 L	13 401 L	13 986 L	14 414 L	15 383 L
BCG/OPV/MCV/TT/DTP	at+5°C	5 649 L	4 250 L	4 362 L	4 487 L	4 626 L
TT/Rubella/HepB/Hib/DTP combo	at+5°C	4 416 L	9 151 L	9 624 L	10 427 L	10 757 L
Net vaccine storage volume in negative CC (litres)		2 220 L	2 074 L	2 058 L	2 004 L	2 066 L
BCG/OPV/MCV/TT/DTP	at -20°C	2 220 L	2 074 L	2 058 L	2 115 L	2 180 L
Add'l CC capacity (litres)						
in positive cold chain (+2°C to +8°C)	at+5°C	- 14 623 L	- 11 286 L	- 10 701 L	- 9 773 L	- 9 304 L
in negative cold chain (-25°C to -15°C)	at -20°C	- 4 030 L	- 4 176 L	- 4 193 L	- 4 246 L	- 4 184 L

It should further be noted that according to the forecast in the cMYP a fourth sub-regional warehouse will be installed in Mongo in 2010.

Table 13C: STORAGE VOLUME CAPACITY IN LITRES AT THE REGIONAL AND DISTRICT LEVEL

YEARS	POSITIVE			NEGATIVE		
	Required	Existing	Gap	Required	Existing	Gap
2008	4 110	6 904	- 2 794	888	16 372	- 15 484
2009	5 360	6 904	- 1 544	830	16 372	- 15 542
2010	5 594	6 904	- 1 310	823	16 372	- 15 549
2011	5 763	6 904	- 1 141	802	16 372	- 15 570
2012	5 941	6 904	- 963	827	16 372	- 15 545

Because of the expansion of healthcare coverage and the health map, as well as aging equipment, the EPI must continue to implement the plan to rehabilitate the cold chain.

The primary energy source for the cold chain is petrol (89% of equipment), although much of the equipment is hybrid and can operate with either petrol or electricity. The remainder of the equipment uses either gas or solar energy. Seventy percent of this equipment is relatively new, having been in use for less than five years.

- △ The cold chain is currently composed of 5 brands.
- △ Cold chain coverage remains insufficient for the country as a whole.
- △ Acquisition at the central level of a 65 KVA generator at the beginning of 2007 is currently helping alleviate the frequent diversions of high-voltage current. Proper vaccine storage depends on this.

3.6.2 Cold chain equipment maintenance

There is a unit within the logistics section of the National EPI Service that is in charge of maintaining the cold chain. This unit is comprised of four technicians, including a specialist in solar energy and another in absorption equipment. This unit has adequate materials to repair equipment without CFCs. This team has set up a plan for supervising maintenance activities regularly. The primary interventions conducted by this unit are the training of district management teams and delegations, and the repair of equipment that is out of order across the territory, thus performing the practical work of the EPI focal points.

3.6.3 Means of Transport

The inventory of rolling stock was taken in 2000. This cMYP has plans for an exhaustive inventory. Even though the inventory has not been updated since, inadequacies in rolling stock were indicated in the various site supervision reports.

At the central level, the EPI has two supervision vehicles, and at the intermediate level 16 Regional Health Delegates have vehicles that are used for epidemiological surveillance. Three Regional Health Delegates do not have any vehicles for supervision.

3.6.4 Vaccine supply and distribution

The government of Chad has inserted a line item in the national budget for "Vaccine procurement" with actual funds and will obtain supplies of vaccines in accordance with the Vaccine Independence Initiative (VII) for African countries. The steps to be taken in the vaccine supply process are the following:

- i) Vaccine requirements are estimated by the Ministry of Public Health, who communicates them to UNICEF for quote.
- ii) A negotiated contract is then signed between the Ministry of Public Health and UNICEF.
- iii) Based on the MOPH request, UNICEF places the order, which is confirmed, and has the quantities ordered delivered to the EPI.
- iv) The invoice is paid after the vaccines and consumables are delivered to the Ministry of Public Health.

Although this system has the advantage of engaging the responsibility of high-level political actors, it is lengthy and runs the risk of a shortage of stock.

To summarize, the system has the following weaknesses:

- Non-implementation of the National Authority for Vaccine Regulation

- Market procedures too long

In vaccine provisions, the table below shows the provision supply period for each level.

Table 17: Supply period and storage by level

N°	Warehouse	Supply period	Supply no.
01	Central Level	Twice per year	02
02	Regional Level	Quarterly	04
03	District Level	Twice per month	06
04	Health Centre Level	Monthly	12

In theory, vaccines and consumables will be distributed in accordance with the “pull” strategy: the lower level replenished from the upper level – once every 3 months. However, the lack of a detailed distribution plan at all levels is a handicap in the regular monitoring of supplies.

Because of this, vaccines and consumables are sometimes distributed from the central level, depending on the available transport.

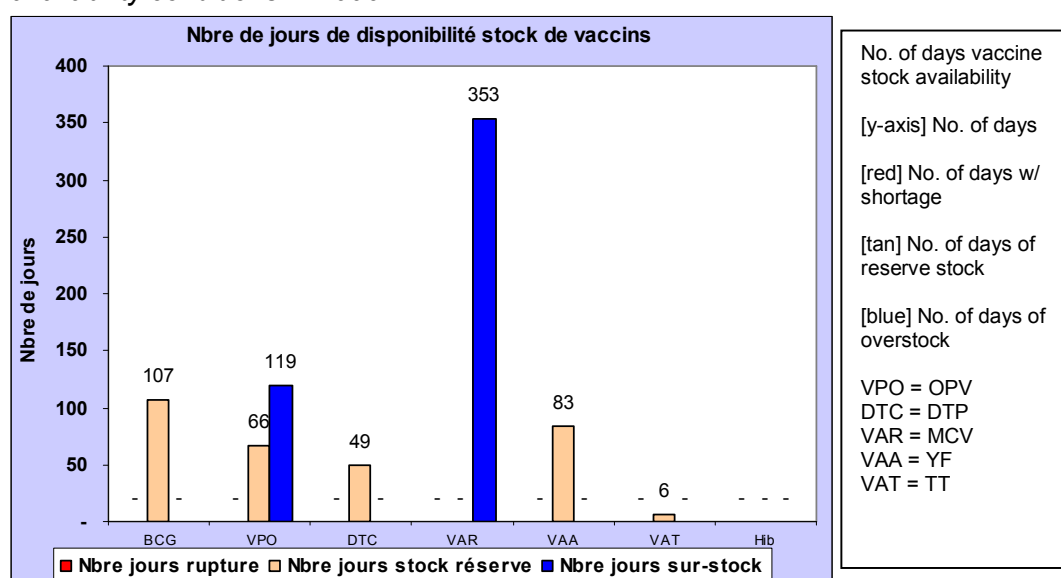
3.6.5 Vaccine and consumable management

The estimation method for vaccine and other inputs that is currently in effect in the country is a target population-based method.

Vaccine management at the central level has been computerized since 2004. At the intermediate level, training of regional focal points in computerized vaccine management just occurred in May 2007.

Regarding this delay in implementing this activity at the decentralised level compared to the recommendation in the 2002 EPI review, the information on availability rates and usage rates were only available at the central level (see tables below).

Table 5 Vaccine availability conditions in 2006



The overstock of MCV observed in 2006 is high because of remaining measles stock from SIA.

Table 18: Usage rate by antigen in 2006

Antigen	BCG	OPV	DTP	MCV	YF	TT
Usage rate	192.82%	94.03%	95.55%	185.35%	123.08%	90.37%

Insufficient information on field data regarding the status of stocks in part explains this under-use of lyophilised vaccines.

3.6.6 Vaccine wastage rate

Vaccine wastage was not rigorously monitored until 2006. This means that data about vaccine management are not always available.

Based on the data available at the national level about the number of doses of vaccines distributed and the number of children immunised in 2006, standard wastage rates are used to estimate vaccine needs.

Use of the computer tool, combined with closer monitoring at all levels, training of focal points, order analysis at all levels, and requiring reports for new resupplies should allow this situation to be corrected.

3.6.7 Injection Safety

The 2003-2007 strategic plan and the national policy document on injection safety emphasize the exclusive use of auto-disable (AD) and/or single-use syringes for immunisation. Safety boxes are recommended for collecting waste, and the following three elimination routes have been chosen:

- burning and burial;
- burial;
- incineration.

All health centres are currently using auto-disable (AD) syringes.

In addition, all the vaccines used by the Programme contain PCV.

Unfortunately this safety plan has been incompletely implemented, notably in terms of the construction of incinerators, because of a lack of financial means. Incinerators have been set up in the health centres of only 5 districts (Ati, Oum Hadjer, Abéché, Pala, and Moundou).

In terms of the other aspects, all personnel responsible for immunisation at all health district levels have received adequate training (MLM/EPI Guidelines) in injection safety guidelines. These guidelines, in poster form, have also been sent to all districts.

3.6.8 Adverse effects following immunisation (AEFI) reporting

Surveillance of adverse effects following immunisation (AEFI) began with the supplemental immunisation activities against measles and MNT. As part of implementing the "Reach Every District" approach, materials were designed and distributed to health centres so that all observed AEFI cases could be reported.

3.7 Advocacy and communication in favour of EPI

EPI communication / social mobilisation is an important strategy in increasing vaccine coverage and creating ownership in the communities. Experiences gained during the POLIO SIA showed that outreach communication was the most effective strategy in Chad. A detailed communication plan for the EPI that integrates this strategy was developed by the programme in collaboration with the Bureau for Information, Education and Communication (BIEC).

The communication plan provides for the use of a network of community health agents spread throughout the entire country to serve as liaisons to transmit messages and promote immunisation; it also recommends continuing education in communication and social mobilisation for nursing personnel in health centres, community health promotion technicians and community health agents in charge of IEC/EPI activities. Unfortunately, this plan was not fully implemented following the conflict of priorities in the mobilisation of resources.

Some activities were conducted, however:

- 1 Training of EPI focal points in communication techniques in 20 districts
- 2 Training of community intermediaries in 20 districts
- 3 Revision of community intermediary guidelines and image boxes.
- 4 Reproduction of social mobilisation media (posters, brochures, etc.)
- 5 Realisation of a KAP/EPI study; these data are not yet available

Advocacy by the Inter-Agency Coordination Committee (CCIA) brought awareness to the highest authorities in the country and mobilized resources in favour of EPI. This advocacy is only partially provided at the intermediate and peripheral levels. Under these circumstances, immunisation has not yet become a family value.

Communities must understand the importance of immunisation, and it must become an integral part of their lives (children's rights / parental obligations). The following actions will be taken during this CMYP, notably the implementation of the national communication strategy:

- 1 Reenergizing the community participation bodies and involving them effectively in immunisation activities (planning, implementation and assessment);
- 2 Strengthening awareness by the population in favour of immunisation through community intermediaries and the mass media;
- 3 Strengthening involvement of health committees in resource management;
- 4 Strengthening advocacy at all levels.

3.8 Funding and financial sustainability of EPI

As part of implementing the Vaccine Independence Initiative (VII), the Government has made significant efforts to increase its contributions to EPI expenditures. It now has a line item in the regular budget for the purchase of EPI vaccines and consumables.

The State will be responsible for the costs of purchasing vaccines and consumables, and for a portion of the cold chain and its operation. The WHO, UNICEF and the European Union contribute to training staff, supervision and supplying equipment for the cold chain and rolling stock. Rotary contributes to procuring the cold chain as part of the National Immunisation Days.

Mobilising resources through the State channels is made difficult by complex disbursement procedures. Invoices for vaccine purchases are not always paid promptly, therefore, which leads to shortages of vaccine and consumable stocks. In 2006, for example, vaccine invoices were paid quite late.

Government grants for EPI are an ever-larger portion of the programme budget.

The funding level provided in the field by the NGOs, collectives and communities is not sufficiently documented. Efforts are in process to encourage decentralised structures to audit this funding (regional health councils, district health councils) and to provide information on it.

3.9 Factors favouring increased vaccine coverage

The following factors played a large role in increasing vaccine coverage when the 2003-2007 EPI multiyear plan was being implemented. These include:

1. Commitment by high-level authorities to immunisation;
2. Availability and good collaboration between all EPI partners;

3. GAVI funds;
4. Organisation of acceleration activities integrated into Mebendazole disinfestation and vitamin A supplements;
5. No vaccine shortages in 2006;
6. Implementation of the Strategy for Accelerating Survival and Development of Children in 7 health districts in the country;
7. Implementation of RED strategy in 30 health districts;
8. Training in DQS (Data Quality Self Assessment) in all regions;
9. Integration of child survival activities (insecticide-treated mosquito nets, vitamin A supplements, and disinfestation with Mebendazole);
10. Immunisation of displaced persons and refugees by NGOs and internationals in the east and south of the country.

3.10 Strengths, weaknesses, opportunities and threats

Table 19: Strengths, weaknesses, opportunities and threats

COMPONENTS	STRENGTHS	WEAKNESSES
Service provision	<p>Availability of immunisation services in 599 out of 639 operational health centres, or 93.7%.</p> <p>Implementation of RED strategy in 30 out of 56 districts</p> <p>Implementation of SASDE strategy in 7 health districts (2003-2007)</p> <p>Reduction of DTP1-DTP3-specific drop-out rates from 40% to 21% (between 2002 and 2006)</p> <p>Organisation of events for supplemental immunisation activities and integrated campaigns (vitamin A, Mebendazole and ITNs)</p>	<p>33 districts out of 56 have not reached 80% for DTP3</p> <p>42 districts out of 56 have a (DTP1-DTP3)-specific drop-out rate greater than 10%</p> <p>Health centres do not vaccinate on all days</p>
Programme Management	<p>Existence of a planning system</p> <p>Existence of an operational ICC</p> <p>Existence of a supervision and activity monitoring system (availability of data management aids)</p> <p>Improvements in sending complete data in reports (50% in 2003, 84% in 2005 and 95% in 2006)</p> <p>Events for integrating child survival activities in the EPI (vit A, Mebendazole, ITN)</p> <p>Implementation of computerised management of vaccine/consumable stock and EPI data at the central and intermediate levels</p> <p>Adoption of an emergency plan by the Ministry of Public Health</p> <p>Construction of new health centres</p>	<p>ICC meetings not held on a regular basis</p> <p>Coordination meetings with regions not held on a regular basis</p> <p>Insufficient computer equipment at the district level</p> <p>Insufficient staff at the peripheral level</p> <p>Non-control of the EPI target population</p> <p>Lacking information about contributions of local NGOs, collectives and the population</p> <p>Insufficient supervision and monitoring of activities at all levels</p> <p>Mobility of health agents and non-training of new agents</p> <p>Institutional level (very low in the organisation chart) of the program does not allow proper circulation of information to the decision-making level of the hierarchy.</p> <p>Existence of zones of responsibility not covered by a health centre</p>

COMPONENTS	STRENGTHS	WEAKNESSES
Capacity strengthening	<p>Existence of a pool of EPI management trainers (teacher and professors in health schools, EPI team, reg. health delegates and chief district physicians)</p> <p>Distribution to service providers of EPI guide and policy guidelines on open vials, injection safety and compliance with the vaccine schedule</p> <p>Training of 300 health agents in EPI management</p>	<p>Insufficient staff training in preventive maintenance at the peripheral level</p> <p>Weak teaching of EPI modules in health schools</p> <p>Insufficient formative supervision at all levels</p>
Communication / social mobilisation	<p>Making use of community liaisons in EPI activities in some districts</p> <p>KAP/EPI survey conducted that will result in a national communications strategy</p> <p>Involvement of community radios in awareness activities</p>	<p>Insufficient interpersonal communication</p> <p>Non-existence of social mobilisation committees in some districts</p>
Strengthening surveillance of EPI target diseases	<p>97% reduction in measles morbidity and mortality compared to 2005</p> <p>Strengthening of the HGRN laboratory and contributions by the lab in the surveillance of EPI target diseases (measles, yellow fever, diphtheria and pertussis)</p> <p>Existence of epidemic management committees at all levels</p> <p>Existence of AFP surveillance focal points in all regions</p>	<p>Insufficient use of guidelines on reporting cases of vaccine-preventable diseases</p> <p>Continuing circulation of non-native wild polio virus</p> <p>Insufficient training of agents in the use of surveillance aids</p> <p>Insufficient investigation and response to tetanus</p> <p>Insufficient radio communication means in 14 out of 56 districts</p> <p>Incomplete and late reporting</p>

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COMPONENTS	STRENGTHS	WEAKNESSES
<p align="center">Provisioning and quality of vaccines / logistics</p>	<p>Existence of two emergency generators at the EPI central warehouse level</p> <p>Existence of three cold chambers at the central level</p> <p>Installation in process of three secondary resupply warehouses for vaccines and consumables</p> <p>Use of approved cold equipment (without CFCs)</p> <p>Existence of a plan to rehabilitate the cold chain</p> <p>Computerised management of vaccines and consumables in all 18 regional health districts</p> <p>Existence of a national policy on vaccine injection safety</p> <p>Manual registration tools for stock movement available and in use</p> <p>AD syringes and safety boxes available in all immunisation centres</p> <p>Existence of PCV for all EPI antigens</p> <p>Agents qualified in maintenance available at the national level</p>	<p>Vaccine and vitamin stock shortages</p> <p>Lack of national regulatory authority</p> <p>Frequent shortages of replacement parts and consumables for the cold chain, and of petrol</p> <p>Insufficient adequate equipment for the destruction of waste</p> <p>Lack of recent, comprehensive inventory of rolling fleet</p> <p>Insufficiency and obsolescence of rolling stock for strategic activities in advanced, mobile, supply and formative supervision</p>
<p align="center">Funding</p>	<p>Existence of several funding sources for the programme (State, development partners, etc.)</p> <p>Existence of a line item in the budget for the purchase of vaccines</p> <p>Regularly increasing participation of the State in EPI funding</p>	<p>Lack of information on contributions by collectives, local NGOs and the community</p> <p>Delays in disbursement procedures from the public treasury</p> <p>Delays in paying purchase invoices for vaccines and consumables</p>

OPPORTUNITIES	THREATS
<p>Political commitment at the highest level to EPI</p> <p>Membership by the country in VII since 1996</p> <p>Partner commitment and availability to support the programme (WHO, WB, UNICEF, EU, GAVI, ROTARY International, NGO/Associations)</p> <p>Commitment by collectives to immunisation; Performance contracts established in some districts (SASDE)</p> <p>Use of petroleum funds to support immunisation beginning in 2007</p>	<p>Socio-political problems create irregularities in healthcare services</p>

3.11 Establishing national priorities

The main problems identified from analysis of the situation were made into priorities based on their severity and how feasible it was to resolve them. The table below summarizes these problems.

Table 20: National priorities

Description of Problems (a) and National Priorities (b)	cMYP Objectives	cMYP Stages	Regional and Global Goals by 2012	Order of Priority
Nat'l immunisation coverage not yet at 90% for all antigens (33 health districts out of 56 not at 80% DTP3 imm. coverage)	Achieve and maintain 90% immunisation coverage per antigen at the national level and at least 80% in all the districts by 2012	2008: 85% nat'l imm. coverage w/ 80% of health districts having at least 80% imm. coverage 2009: 88% nat'l imm. coverage w/ 85% of health districts having at least 80% imm. coverage 2010: 90% nat'l imm. coverage w/ 90% of health districts having at least 80% imm. coverage 2011: 95% nat'l imm. coverage w/ 90% of health districts having at least 80% imm. coverage 2012: 95% nat'l imm. coverage w/ 90% of health districts having at least 80% imm. coverage	Increase and maintain immunisation coverage	2
Hib and hepatitis B infections are a public health problem	By 2012, Hib3 and HepB3 coverage reach the same level as DTP3	2008: 40% nat'l imm. coverage in DPT Hep Hib3 2009: 88% nat'l imm. coverage w/ 85% of health districts having at least 80% imm. coverage 2010: 90% nat'l imm. coverage w/ 90% of health districts having at least 80% imm. coverage 2011: 95% nat'l imm. coverage w/ 90% of health districts having at least 80% imm. coverage 2012: 95% nat'l imm. coverage w/ 90% of health districts having at least 80% imm. coverage	Adopt new vaccines	3
Despite efforts to eliminate MNT, this disease remains a public health problem	By 2012, eliminate maternal and neonatal tetanus	2008: 22% of high-risk districts (HRD) have conducted TT campaigns 2009: 50% of high-risk districts (HRD) have conducted TT campaigns 2010: 76% of high-risk districts (HRD) have conducted TT campaigns 2011: 100% of high-risk districts (HRD) have conducted TT campaigns 2012: Maintain MNT elimination	Eliminate MNT	4

Description of problems (a) and National Priorities	cMYP Objectives	cMYP Stages	Regional and Global Goals by 2012	Order of Priority
Despite efforts to control measles, this disease remains a public health problem	By 2012, achieve and maintain measles control	2008-2009: 100% of districts have conducted follow-up campaigns against measles 2010-2012: 100% of districts have conducted follow-up campaigns against measles	Control measles	5
High drop-out rate (42 districts out of 56 have a DTP1/DTP3-specific drop-out rate greater than 10%)	Reduce the DTP1/DTP3 drop-out rate to less than 10% in all health districts by 2012	2008: Drop-out rate ≤ 10% in 50% of health dist. 2009: Drop-out rate ≤ 10% in 70% of health dist. 2010: Drop-out rate ≤ 10% in 80% of health dist. 2011: Drop-out rate ≤ 10% in 90% of health dist. 2012: Drop-out rate ≤ 10% in 100% of health dist.	Achieve a drop-out rate ≤ 10%	7
High wastage rate (2006 data): BCG = 53% DTP = 30% TT = 30% MCV = 35% OPV = 30% YF = 35%	Reduce wastage rates BCG = 50% DTP-Hep B-Hib = 5% TT = 10% MCV = 20% OPV = 10% YF = 20%	2008: DTP-HepB-Hib wastage rate of 10% MCV/YF wastage rate of 30% TT/OPV wastage rate of 30% 2009: DTP-HepB-Hib wastage rate of 5% MCV/YF wastage rate of 25% TT/OPV wastage rate of 20% 2010: DTP-HepB-Hib wastage rate of 5% MCV/YF wastage rate of 20% TT/OPV wastage rate of 15% 2011: DTP-HepB-Hib wastage rate of 5% MCV/YF wastage rate of 20% TT/OPV wastage rate of 10% 2012: DTP-HepB-Hib wastage rate of 5% MCV/YF wastage rate of 20% TT/OPV wastage rate of 10%	Reduce wastage rates to standards	8
Vaccine and consumable stock shortages	By 2012, achieve and maintain zero shortages in vaccines, injection supplies and other consumables	2008-2009: All levels have zero stock shortages	Guarantee access to quality vaccines	9

Description of problems (a) and National Priorities (b)	cMYP Objectives	cMYP Stages	Regional and Global Goals by 2012	Order of Priority
Low OPV3 immunisation coverage at the nat'l level	By 2012, eradicate polio	2008: 0 cases of wild polio virus 2009: 0 cases of wild polio virus 2010: 0 cases of wild polio virus 2011: 0 cases of wild polio virus 2012: 0 cases of wild polio virus	Eradicate polio	1
Obsolete cold chain, insufficient vaccine storage capacity and vaccine waste elimination capacity at intermediate and peripheral levels	By 2012, increase vaccine storage capacity and vaccine waste elimination capacity at all levels	2008: 70% of districts equipped with approved, adequate cold chain 2009: 80% of districts equipped with approved, adequate cold chain 2010: 90% of districts equipped with approved, adequate cold chain 2011: 95% of districts equipped with approved, adequate cold chain 2012: 100% of districts equipped with approved, adequate cold chain 2008-2012: 90% of health centres have incinerators	Strengthen the immunisation system	7
Poor allocation of State budget to MOPH and thus to EPI	By 2012, ensure sustainable funding of the expanded programme on immunisation	2008: Ease payment procedures for vaccine and consumable invoices 2009: 5% increase in budget allocated to EPI in 2008 2012: maintain budget allocated to EPI at 15%	Ensure sustainable funding of the EPI	6

The following priority problems came out in an analysis of this table:

1. The poor OPV3 coverage, which provides low collective immunity in children and allows the wild poliovirus to continue circulating.
2. National immunisation coverage has not yet reached 90% for all antigens (33 health districts out of 56 have not reached 80% DTP3 immunisation coverage).
3. The high drop-out rate (42 districts out of 56 have a DTP1/DTP3 drop-out rate greater than 10%).
4. High vaccine wastage rates.
5. Hib and hepatitis B infections are a public health problem.
6. Despite efforts to eliminate MNT and to control measles, these diseases still remain public health problems.
7. Vaccine and consumable stock shortages.
8. Obsolescence of the cold chain, insufficient vaccine storage capacity and vaccine waste elimination capacity at intermediate and peripheral levels.
9. The poor allocation of the State budget to MOPH and thus to EPI.

The main causes of the priority problems identified above are:

- Irregular immunization at the fixed stations because of the policy of using opened vials was poorly applied or not applied, leading to improper vaccine management;
- Irregularities in advanced strategies related to a lack of rolling stock or financial resources to provide for recurring costs;
- Poor application of the door-to-door strategy and poor supervision of teams during SIAs;
- Poor vaccine management capacity at intermediate and peripheral levels;
- The plan to rehabilitate the cold chain was poorly funded;
- Under-use of immunisation services due to low demand by parents;
- Shortages in vaccines and difficulty in supplying and distributing vaccines at the peripheral level;
- Poor execution of the plan to eliminate MNT, associated with a lack of financial resources and the resurgence of localised measles epidemics;
- Disbursement procedures from the public treasury are burdensome;
- Multiple State priorities (Sudanese and Central African refugees and internally-displaced refugees in the eastern part of the country, social problems, etc.).

The national priorities that were selected in this complete multiyear plan for EPI are:

1. Eradication of polio
2. Improvement in routine EPI vaccine coverage
3. Introduction of new vaccines
4. Elimination of MNT
5. Measles control
6. Sustainable financing
7. Improvement in Programme management.

IV. VISION

By 2015 Chad has created a vision for itself with the following 4 primary arms:

- Immunisation is a priority to strengthen the healthcare system in general and to attain the Millennium Development Goals (MDG);
- More people are vaccinated against more diseases;
- Equal and equitable access to immunisation services per the national schedule is guaranteed to all children, adolescents and adults;
- Immunisation activities are integrated into priority healthcare development interventions regardless of the social, political and economic environment.

V. EPI OBJECTIVES

5.1 General Objectives

To contribute to the reduction of morbidity and mortality from vaccine-preventable diseases.

5.2 Specific strategic and activity objectives

1/ Achieve and maintain 90% immunisation coverage per antigen at the national level and at least 80% in all the districts by 2012.

Table 21a: Projection of % vaccine coverage in Chad from 2008 to 2012

Antigens	2008	2009	2010	2011	2012
BCG	95	95	95	95	95
DTP1	95	95	95	95	95
DTP3	45	NA	NA	NA	NA
DTP HepB-Hib3	40	88	90	95	95
OPV3	85	88	90	95	95
MCV	85	88	90	95	95
YF	85	88	90	95	95
TT 2+ FE	80	85	90	95	95

This step, projection of TT2 coverage, is important as we have changed targets from “women of childbearing age” to “pregnant women”. See the circular letter from Mr. Secretary General.

Table 21b: Baseline data and objectives

Number	Baseline data and objectives					
	Base year 2006	2008	2009	2010	2011	2012
Births	361 797	416 326	429 232	442 539	456 257	470 401
Infant deaths						
Surviving infants	317 675	365 555	376 887	388 570	400 616	413 035

Pregnant women (4.2%)		212 642	429 527	442 842	456 570	470 724	485 316
Target population vaccinated with BCG		306 762	347 277	358 043	368 068	378 374	388 968
BCG coverage*		85%	95%	95%	95%	95%	95%
Target population vaccinated with OPV3		231 080	310 722	331 661	348 696	378 374	388 968
OPV3 coverage**		73%	85%	88%	90%	95%	95%
Target population vaccinated with DTP3***		245 033	164 500				
DTP3 coverage**		77%	45%	NA	NA	NA	NA
Target population vaccinated with DTP1***		311 690	347 277	NA	NA	NA	NA
Wastage ¹ rate in base-year and planned thereafter (DTP1-DTP3)		30%	5%	5%	5%	5%	5%
Target population vaccinated with 3rd dose of DTP-HepB-Hib.		NA	146 222	331 661	348 696	378 374	388 968
..... Coverage**		NA	40%	88%	90%	95%	95%
Target population vaccinated with 1st dose of Yellow Fever.....		235 198(74%)	310 722	331 661	348 696	378 374	388 968
Wastage ¹ rate in base-year and planned thereafter		36%	30%	25%	20%	20%	20%
Target population vaccinated with 1st dose of Measles-containing vaccine		262 084	310 722	331 661	348 696	378 374	388 968
Target population vaccinated with 2nd dose of Measles-containing vaccine		NA					
Measles coverage**		NA					
Pregnant women vaccinated with TT+		212 642	292 444	320 354	348 696	378 374	388 968
TT+ coverage****		60%	80%	85%	90%	95%	95%
Vitamin A supplement	Mothers (<6 weeks after delivery)	70 611(20%)	NA	NA	NA	NA	NA
	Infants (>6 months)	77%	80%	82%	85%	90%	90%
Annual DTP Drop out rate [(DTP1-DTP3)/DTP1]x100		25% of the HDs have less than 10%	50% of the HDs have less than 10%	70% of the HDs have less than 10%	80% of the HDs have less than 10%	90% of the HDs have less than 10%	100% of the HDs have less than 10%
Annual measles drop-out rate (for countries applying for YF vaccine)		NA	NA	NA	NA	NA	NA

* Impact on children under 6 months has not yet been shown.

2/ By 2012, eradicate polio

3/ By 2012, Hib3 and HepB3 coverage reach the same level as DTP3

4/ By 2012, eliminate maternal and neonatal tetanus

5/ By 2012, achieve and maintain measles control

6/ By 2012, reduce the DTP1/DTP3 drop-out rate to less than 10% in all health districts

7/ By 2012, reduce the wastage rates to:

BCG	= from 53% to 50%
DTP-Hep B-Hib	= from 30% to 5%
TT	= from 30% to 10%
OPV	= from 30% to 10%
MCV	= from 35% to 20%
YF	= from 35% to 20%

8/ By 2012, achieve and maintain zero shortages in vaccines, injection supplies and other consumables

9/ By 2012, increase vaccine storage capacity and vaccine waste elimination capacity at all levels

10/ By 2012, ensure sustainable funding of the expanded programme on immunisation

VI. ESSENTIAL STRATEGIES AND ACTIVITIES BY COMPONENT

6.1 Component 1: Service provision

Table 22: Specific objectives, strategies and essential activities

Objective (1)	Strategy (2)	Essential Activities (3)
<p>1. Achieve and maintain 90% immunisation coverage per antigen at the national level and at least 80% in the districts</p>	<p>Implementation of RED strategy</p> <p>Implementation of SASDE strategy</p> <p>Integration of other healthcare interventions</p>	<p>Support revision of districts' micro plans</p> <p>Extend establishment of performance contracts in all districts</p> <p>Provide continuing training for regional and district health delegation Management Teams on the new strategies and on injection safety</p> <p>Reenergize the community participation bodies (health committee, social mobilisation committee, etc.) and involve them effectively in immunisation activities (planning, implementation and assessment)</p> <p>Support implementation of fixed, advanced and mobile strategies for immunisation activities</p> <p>Support monitoring and formative supervision of immunisation activities</p> <p>Implement the national communication strategy</p> <p>Pursue integrating vitamin A and Mebendazole in the routine EPI and in SIA</p> <p>Integrate insecticide-treated mosquito nets into routine EPI</p>
<p>2. By 2012, eradicate polio</p>	<p>Supplemental Immunisation Activities</p> <p>Surveillance of AFP cases</p> <p>Advocacy, social mobilisation, communication to change behaviour</p>	<p>Support revision of SIA/POLIO micro plans</p> <p>Organise SIA/POLIO</p> <p>Organise response SIA/POLIO in zones where cases are found</p> <p>Support surveillance of AFP cases</p> <p>Implement the communication plan for SIA/POLIO</p>

Objective (1)	Strategy (2)	Essential Activities (3)
3. By 2012, Hib3 and HepB3 coverage reaches 90% at the national level and at least 80% in all districts	Capacity strengthening Providing supplies Strengthening coordination and partnership Communications to change behaviour in favour of the new vaccine	Adapt immunisation management tools Train a pool of trainers on the use of pentavalent vaccines Implement the pentavalent introduction plan
4. By 2012, eliminate maternal and neonatal tetanus	Organise SIA in high-risk districts Promote hygiene and clean births Epidemiological and case-response surveillance	Support development of SIA/MNT micro plans Organise SIA/MNT in the high-risk districts Train staff on how to promote clean births Support supervision of staff in charge of assisted births Support communication in favour of clean births Support case-by-case and case-response surveillance of MNT cases
5. By 2012, achieve and maintain measles control	Organise follow-up campaigns Epidemiological surveillance	Support revision of SIA/Measles micro plans Support implementation of follow-up SIA/Measles Support case-by-case biological surveillance
6. By 2012, reduce the DTP1/DTP3 drop-out rate to less than 10% in all health districts	Implementation of "Reach Every District" strategy	Extend the RED approach to all districts Support searching for lost-to-follow-up Support reducing missed opportunities
7. Reduce wastage rates BCG = 50% DTP-Hep B-Hib = 5% OPV = 10% YF = 20%	Formative supervision, monitoring	Support computerised vaccine management in all regional health delegations and districts Monitor wastage rates using the immunisation data monitoring tool Supervise the effectiveness of applying the open vial policy

6.2 Component 2: Suppling quality vaccines and logistics

Table 23: Specific objectives, strategies and essential activity

Objective (1)	Strategy (2)	Essential Activities (3)
8. By 2012, achieve and maintain zero shortages in vaccines, injection supplies and other consumables	Providing supplies Controlling vaccine quality	Acquiring vaccines, injection supplies and consumables Providing regular supplies to regions, districts and health centres of safe injection supplies Resupplying health centres with pentavalent vaccine Supplying polio vaccine for response cases
9. By 2012, increase vaccine storage capacity and vaccine waste elimination capacity at all levels	Rehabilitation Construction	Rehabilitate cold chain equipment Provide vaccine carriers to health centres Create four sub-national resupply warehouses for vaccines for regions Construct incinerators in 90% of the health centres

Objective (1)	Strategy (2)	Essential Activities (3)
4. By 2012, eliminate maternal and neonatal tetanus	Planning Monitoring Surveillance	Support SIA/MNT micro planning in high-risk districts Conduct SIA in high-risk districts Support formative supervision of activities to eliminate MNT Provide performance monitoring
5. By 2012, achieve and maintain measles control	Follow-up SIA Monitoring activities	Conduct follow-up measles campaigns Provide performance monitoring
6. By 2012, reduce the DTP1/DTP3 drop-out rate to less than 10% in all health districts	RED Monitoring activities	Support active searching for lost-to-follow-up Provide formative supervision Provide performance monitoring
7. Reduce wastage rates BCG = 50% DTP-HepB-Hib = 5% TT = 10% MCV = 20% OPV = 10% YF = 20%	Management Providing supplies	Support computerised management of vaccine and consumables stock at the district level Provide monthly monitoring of vaccine wastage rates Support cold chain operation Provide 14 health districts with radio communication methods
8. By 2012, achieve and maintain zero shortages in vaccines, injection supplies and other consumables	Advocacy Training Formative supervision Rational management	Organise periodic advocacy meetings with the Government to mobilise the resources need to purchase vaccines Organise healthcare staff sessions on awareness for complying with vaccine management standards
9. By 2012, increase vaccine storage capacity and vaccine waste elimination capacity at all levels	Equipment	Equip and rehabilitate the health centres and health districts with cold chain equipment
10. By 2012, ensure sustainable funding of the expanded programme on immunisation	Advocacy Social mobilisation	Organise periodic advocacy meetings with the Government, members of parliament and partners to ensure sustainable programme funding

VII. SCHEDULE OF ACTIVITIES

Table 25: Schedule of activities

Essential activities by component	2008	2009	2010	2011	2012
Service provision					
Support revision of districts' micro plans					
Provide continuing training for regional and district health delegation Management Teams on the new strategies and on injection safety					
Extend establishment of performance contracts in all districts					
Support monitoring and formative supervision of immunisation activities					
Reenergize the community participation bodies (health committee, social mobilisation committee, etc.) and involve them effectively in immunisation activities (planning, implementation and assessment)					
Implement the national communication strategy					
Pursue integrating vitamin A and Mebendazole in the routine EPI and in SIA					
Integrate insecticide-treated mosquito nets into routine EPI					
Support revision of SIA/POLIO micro plans					
Organise SIA/POLIO					
Organise response SIA to polio cases					
Support surveillance of AFP cases					
Implement the communication plan for SIA/POLIO					
Implement the pentavalent introduction plan					
Adapt immunisation management tools					
Train a pool of trainers on the use of the pentavalent vaccine					
Support preparing SIA/MNT micro plans					
Train staff on the promotion of clean births					
Organise SIA MNT in the high-risk districts					
Support supervision of staff in charge of assisted births					
Support communication in favour of clean births					
Support case-by-case and case-response surveillance of MNT cases					
Support revision of follow-up SIA/Measles micro plans					
Support implementation of follow-up SIA/Measles					
Support case-by-case biological surveillance of measles					
Extend the RED approach					
Support searching for lost-to-follow-up					
Support reducing missed opportunities					
Support computerised vaccine management in all regional health delegations					

Monitor wastage rates using the immunisation data monitoring tool					
Supervise the effectiveness of applying the open vial policy					
Suppling quality vaccines and logistics					
Acquiring vaccines, injection supplies and consumables					
Resupplying health centres with pentavalent vaccine					
Supplying polio vaccine for response cases					
Rehabilitate cold chain equipment					
Provide vaccine carriers to health centres					
Create four sub-national resupply warehouses for vaccines for regions					
Construct incinerators in 90% of the health centres					
Programme Management					
Prepare the integrated training plan					
Implement the training plan					
Provide formative supervision					
Provide feedback information					
Revise data collection aid					
Provide feedback information					
Provide EPI-related operational research					
Provide external programme review					
Create the National Regulatory Authority for vaccines					
Implement the plan for strengthening mobile logistics					
Implement programmes for annual ICC meetings					
Provide performance monitoring					
Provide follow-up for eradication certification activities					
Implement the pentavalent introduction plan					
Prepare and implement the pentavalent training plan					
Revise data collection aids					
Assess the pentavalent					
Support SIA/MNT micro planning in high-risk districts					
Conduct SIA/MNT					
Conduct follow-up measles campaigns					
Support searching for immunisation lost-to-follow-up					
Support computerised management of vaccine and consumables stock at the district level					
Provide 14 districts with means for radio communication					
Provide monthly monitoring of vaccine wastage rates					
Support cold chain operation					
Organise periodic advocacy meetings with the Government to mobilise the resources need to purchase vaccines					

Organise staff sessions on awareness for complying with vaccine management standards					
Equip and rehabilitate the health centres and districts with cold chain equipment					
Organise periodic advocacy meetings with the Government, members of parliament and partners to ensure sustainable programme funding					

VIII. MONITORING ASSESSMENT

8.1 Institutional framework of the Complete MultiYear Plan implementation

The responsibility for implementing the strategies and activities of this five-year plan mainly falls on the Ministry of Public Health and is spearheaded by the National EPI Service.

An annual implementation plan that follows from this five-year plan will be prepared for each one-year period. The annual plan will include specific objectives to attain, an activity schedule, and the party responsible for implementing these activities. Specific costs of activities to be conducted will be laid out and the funding sources will be indicated. Specific, detailed indicators will be prepared in this plan, so that the EPI, along with its internal and external partners, can conduct an annual assessment.

The Inter-Agency Coordination Committee for EPI must mobilise funds and other implementation means necessary to allow the EPI to achieve its objectives. The ICC will also supervise and monitor implementation of the EPI annual plan, and will ensure that funds allocated to the EPI are managed transparently. The annual increase in EPI vaccine coverage, along with updated data on mortality and morbidity, reducing vaccine wastage rates and drop-out rates, are outreach indicators that the ICC can use to regularly monitor EPI performance.

The table below lists the various indicators that will be used to monitor the extent to which the planned activities are realised. The monitoring / assessment report will be communicated regularly to ICC members.

Table 26: Monitoring indicators

OBJECTIVE	INDICATORS	DATA SOURCES	PERIODICITY
Achieve 90% immunisation coverage per antigen at the national level and at least 80% in the districts	Coverage rate per antigen	Monthly activity reports from health centres	Monthly
	Drop-out rate	Training reports	Twice per year
	No. of agents trained	Reports/Contracts	
	No. of health centres that have established the performance contract	Awareness activities reports	Quarterly, bi-monthly and bi-annually
	% of health districts using the community liaisons for awareness	Supervision reports	
	No. of supervisions conducted	Monitoring meetings reports	
	No. of advance /mobile outings conducted	Activity reports	
	No. of districts with a micro plan		
No. of children 0-11 months who have received 3 doses of pentavalent vaccine			

	No. of monitoring meetings held by level		
By 2012, eradicate polio	Rate of non-polio AFP Rate of stools specimens taken in 14 days No. of cases of isolated wild polio virus	Weekly surveillance reports	Weekly
By 2012, eliminate maternal and neonatal tetanus	No. of cases in 1 000 live births per health district No. of cases investigated out of the no. of cases reported No. of responses conducted	Weekly surveillance report Investigation and response reports	Weekly By case
By 2012, achieve and maintain measles control	Measles morbidity and mortality compared to the situation in 2005 No. of cases where blood samples were taken	Weekly surveillance report	Weekly
By 2012, reduce the DTP1/DTP3 drop-out rate to less than 10% in all health districts	District drop-out rates	Monthly activity reports Directory of healthcare statistics	Monthly Annually
Reduce wastage rates BCG = 50% DTP-HepB-Hib = 5% TT = 10% MCV = 20% OPV = 10% YF= 20%	Wastage rate	Monthly activity reports Directory of healthcare statistics	Monthly Annually
By 2012, achieve and maintain zero shortages in vaccines, injection supplies and other consumables	Wastage rate No. of days with stock shortages No. of secondary vaccine resupply sites created in regions	Monthly reports at all levels Supervision reports Reception PV	Monthly Quarterly, bi-monthly and bi-annually
By 2012, ensure sustainable funding of the programme	Percentage of the State budget allocated to immunisation Proportion of funds mobilised compared to expected amount	Annual State budget Annual expenditure report	Twice per year

IX. ANALYSIS OF COSTS AND FUNDING

9.1 Methodology

Data was collected from standardised forms and took into account the information requested in the programme costs and funding analysis tool that was made available to the country by GAVI. Partners involved in the healthcare sector were contacted for data collection, as well as for data verification and validation.

The total cost of the Expanded Programme for Immunisation includes recurring costs², capital costs³ and shared costs⁴ throughout all levels of the health pyramid.

Direct immunisation costs include vaccines, injection supplies, staff, transport, maintenance and overhead, short-term training, social mobilisation and IEC, disease control and surveillance, programme management, and other recurring costs.

The problem we had recreating past EPI funding data was due to under-estimates of programme costs. This is mainly due to the large number of partners working directly in the field who do not have representation at the central level. As a result, the costs of these interventions are not well known at the national level. However, through the re-energized regional ICC, the EPI structures for Regional Health Delegations will be able to get information about EPI activity packages that are planned and conducted by partners during these committees' monthly meetings.

9.2 Quantitative data on costs and funding relative to the baseline year (2006)

Overall cost and cost per component in the baseline year 2006

Table 27: 2006 baseline indicators

Indicator for Baseline Year	2006
Total immunisation expenditures	\$7 343 686
Immunisation campaigns	\$4 318 856
Routine Immunisation	\$3 024 830
per capita	\$0.3
per child DTP3	\$12.7
% vaccines and injection supplies	28.5%
% national financing	32.9%
% total healthcare expenditures	4.9%
% total gvt. healthcare expenditures	12.2%
% GDP	6.21%
Total	\$1 376 547
% shared costs in the total	16%
TOTAL	\$8 720 233

For 2006, the total cost of the program is US\$ 8 720 233, of which US\$ 3 024 830 (41%) is for recurring routine costs, US\$ 1 376 547 (16%) is for shared costs, US\$ 4 318 856 (59%) is for the cost of supplemental immunisation activities (SIA).

² These costs include the costs for traditional vaccines, new and underused vaccines, injection supplies, staff, transport and communication, programme operation, cold chain maintenance, training, communication, epidemiological surveillance and technical assistance

³ These include cold chain equipment and transportation as well as computer and communications equipment

⁴ These contain costs for non-permanent EPI staff and transportation and buildings not solely used for the immunisation programme

At the Health District level, these costs are also affected by the logistical support provided by partners who intervene directly in the field, such as WORLD VISION, Coopération française, other bilateral cooperation agencies, etc.

During 2006, the cost of routine immunisation was assessed as US\$ 0.30 per person, which equals 6.21% of the GDP for that year.

The cost per child receiving three doses of DTP was US\$ 12.70.

EPI funding for the baseline year

EPI was mainly funded by the Chad government and by traditional immunisation lenders – WHO, UNICEF and FED – as well as by GAVI, a new lender since 2003. The Rotary Club and other lenders are also involved in funding the EPI in Chad. Information about the financial participation by these funding agencies comes from coordination and the ICC.

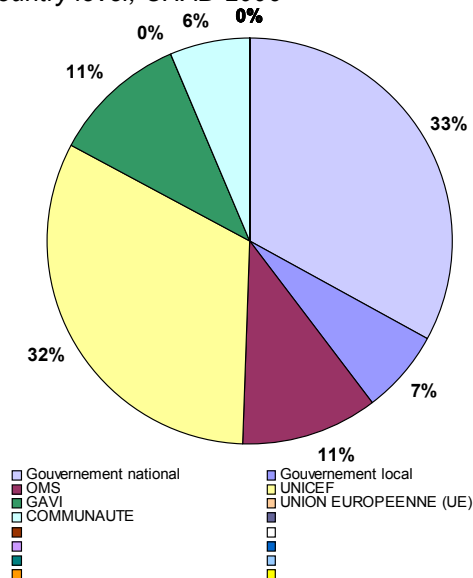
However, note that at the Health District level it is still difficult to obtain a clear picture of the precise financial value of interventions by many of the partners in EPI activities.

From Figure 6 we see that traditional and new partners contributed the majority of the funding for the programme. Most of the funding was provided by UNICEF, WHO and GAVI.

The government's portion of overall programme funding was 40%, essentially covering agent salaries, the purchase of vaccines and consumables, and costs related to building use.

If we look at routine EPI funding alone, as shown in Figure 12, the majority of the funds were grants provided by the STATE (40%), UNICEF (32%), GAVI (11%) and WHO (11%).

Figure 6: Routine EPI funding sources by partner at the country level, CHAD 2006



9.3 Future resource requirements and programme funding

Future resource costs and requirements

Resource estimates in the methodology plan are primarily based on the EPI five-year 2003-2007 strategic plan, but also integrate new elements that reflect adjustments to the programme. For the 2008-2012 period, the programme is a projection of medium-term activities. Other documents were also used to prepare the estimates for future requirements:

- The GAVI submission form;
- The five-year measles control plan 2005-2009;
- The MNT elimination plan;
- The plan to rehabilitate the cold chain;
- The plan to introduce the HepB Hib pentavalent;
- The MOPH programme budget.

Supplemental immunisation activities during the projection period, notably for polio, measles and MNT, will be a significant factor in the required programme resources. Another area of expenditures is logistics strengthening, both for the distribution of vaccines and inoculation supplies as well as means for staff to travel. The cold chain must also be strengthened. Increasing the amount of cold chain equipment will ensure that quality vaccines are available at all

levels. The open vials policy will be able to be applied in facilities that have refrigerators, thus reducing the wastage rate. Emphasis will be given to the peripheral level (health centres). This increase will have an impact on the maintenance and overhead costs for cold chain equipment, which will increase proportionally with the amount of equipment.

The EPI also plans a major programme management arm oriented around actions to strengthen coordination and partnership, and a new sub-arm of sustainable funding. This programme management will take place at the central, intermediate and operational level, via coordination meetings and quarterly district reviews. Epidemiological surveillance will be strengthened, especially in the zones of responsibility, together with routine immunisation and SIA.

To continue its efforts to introduce new vaccines, Chad plans to introduce the hepatitis B and Haemophilis influenzae type b vaccine as a pentavalent, liquid, single-dose vaccine in July 2008.

Table 28: Projected resource needs from 2008-2012

Cost Category	Base Year 2006	2008	2009	2010	2011	2012	Total 2008 - 2012
	US\$	US\$	US\$	US\$	US\$	US\$	US\$
Vaccines	752 395	2 967 906	4 545 869	4 396 384	4 509 678	4 388 381	20 808 218
- Traditional vaccines	430 132	513 826	419 466	419 342	434 971	447 150	2 234 754
- New and underused vaccines	322 263	2 454 079	4 126 403	3 977 042	4 074 707	3 941 231	18 573 463
Injection supplies	108 984	232 708	274 104	289 145	311 680	320 407	1 428 043
Personnel	340 241	390 157	417 503	435 296	453 634	472 530	2 169 120
- Salaries for full-time personnel	72 558	97 203	105 255	107 360	109 507	111 697	531 023
- Per-diems for outreach vaccinators/mobile teams	83 048	93 281	105 690	117 247	129 223	141 632	587 072
- Per-diems for supervision	184 634	199 672	206 559	210 690	214 903	219 202	1 051 025
Transportation	30 080	30 684	31 321	31 964	32 541	33 217	159 727
- Fixed strategy and delivery of vaccines	18 983	19 364	19 764	20 168	20 536	20 960	100 792
- Advanced and mobile strategy	11 097	11 320	11 557	11 796	12 005	12 257	58 935
Maintenance and overhead	1 166 852	1 212 969	1 255 265	1 306 521	1 198 239	1 240 002	6 212 996
Cold chains	677 707	711 729	733 330	765 955	702 577	723 301	3 636 893
Other equipment	56 107	59 540	71 403	81 022	26 927	\$38 592	277 484
Buildings	433 038	441 699	450 533	459 544	468 734	478 109	2 298 619
Short-term training	93 860	119 570	72 663	74 116	75 599	77 111	419 059
Social mobilisation and IEC	65 307	66 613	67 945	69 304	70 690	72 104	346 657
Disease control and surveillance	313 904	224 883	229 380	233 968	238 647	243 420	1 170 298
Programme Management	14 689	14 983	25 997	15 588	15 900	141 294	\$213 762
Other recurring costs		98 757	21 229	21 653	22 086	22 528	186 254
Sub-total for recurring costs	2 886 313	5 359 228	6 941 278	6 873 940	6 928 694	7 010 994	33 114 133
Vehicles	70 031	3 782	61 288	21 639		65 040	151 749
Cold chain equipment	46 200	976 535	550 722	801 508	861 025	1 131 136	4 320 926
Other capital costs	22 286	5 883	105 433	106 121	100 328	151 569	469 334

Sub-total for capital	138 517	986 200	717 443	929 269	961 354	1 347 745	4 942 010
Routine Sub-total	3024830	6345428	7658721	7803209	7890048	8358739	38056143
Polio	2 250 757	4 185 762	1 316 566	1 147 003			6 649 331
Vaccines	802 561	643 968	199 179	170 630			1 013 778
Operating costs	1 448 196	3 541 794	1 117 386	976 372			5 635 553
Measles	2 068 099	3 700 768			4 131 894		7 832 663
Vaccines and injection supplies	1 297 474	1 431 558			1 508 158		2 939 716
Operating costs	770 625	2 269 210			2 623 736		4 892 947
NN tetanus		9 238 247	9 701 626	10 158 860	10 637 908		39 736 641
Vaccines and injection supplies		654 674	674 969	693 868	713 297		2 736 809
Operating costs		8 583 573	9 026 657	9 464 991	9 924 611		36 999 832
Sub-total for campaign costs	4 318 856	17124777	11 018 192	11 305 862	14 769 802		54 218 634
Grand Total	7 343 686	23 470 205	18 676 913	19 109 071	22 659 850	8 358 739	92 274 777

Table 28 shows that the overall cost of the programme will gradually increase between 2008, 2009, 2010 and 2011. The decrease seen in 2012, however, is due to the end of the campaigns.

The costs of the campaigns are a significant portion of the total cost for the cMYP. The total is US\$ 54 218 634, or 60% of the overall cost of the programme. Recurring costs account for a total of US\$ 33 114 133 for the entire period, or 87% of the cost of routine EPI and 31% of the overall cost of the programme. Vaccine and injection supplies account for 67% of the recurring costs. This shows the significance of funding for the pentavalent vaccine.

The primary investment costs for the period are for the cold chain, because of the need to increase storage volume at various levels to be able to handle the introduction of new vaccines.

Table 29: Summary of projected resource needs by domain from 2008-2012

Activities	2008	2009	2010	2011	2012	Total 2008- - 2012
Routine	6 345 428	7 658 721	7 803 209	7 890 048	8 358 739	38 056 143
Campaigns	17 124 777	11 018 192	11 305 862	14 769 802		54 218 634
Total	23470205	18 676 913	19 109 071	22 659 850	8 358 739	92 274 777

Table 29 shows that the cost of routine EPI will gradually increase from one year to the next. It rises from US\$ 6 345 428 to US\$ 8 358 739 between 2008 and 2012. These increases are mainly due to the introduction of new vaccines during the projected period.

Cost projections for the campaigns decrease significantly in 2012, according to the variations in the targets for the various campaigns planned.

9.4 Analysis of the availability of projected funding

9.4.1 Secured funding

Secured funding comes from concrete commitment by the Government (budget line items, CDMT) and by traditional partners.

Table 30: Level of projected secured financing between 2008-2012

Sources of funding	2008	2009	2009	2010	2011	2008- 2012
Nat'l government	\$2 407 796	\$2 023 884	\$1 561 672	\$2 361 490	\$2 750 858	\$11 105 700
Local government	\$711 729	\$733 330	\$765 955	\$702 577	\$723 301	\$3 636 893
WHO	\$639 865	\$255 377	\$249 556	\$254 547	\$384 714	\$1 784 060
UNICEF	\$390 251	\$411 515	\$429 204	\$447 358	\$466 154	\$2 144 482
GAVI	\$2 416 677	\$4 173 327	\$4 032 725	\$4 026 389	\$3 891 560	\$18 540 679
Total Assured Funding	\$6 566 318	\$7 597 433	\$7 039 112	\$7 792 361	\$8 216 588	\$37 211 813

The proportion of funding secured for the 2008 – 2012 period is low (40%) compared to the total cost of the programme.

The cost of immunisation campaigns, capital costs and transportation costs are categories that do not have certain funding in the 2008-2012 period.

Vaccines and injection supplies are 100% assured.

9.4.2 Secured and probable funding

The combination of secured and probable funding shows the level of commitment by the government and its partners.

Table 31 gives the projected levels of secured and probable funding in comparison to the overall

cost.

Table 31: Projected levels of secured and probable funding in comparison to the overall cost

	2008	2009	2010	2011	2012	2006-2012
Funding gap (assured funding)	\$6 566 318	\$7 597 433	\$7 039 112	\$7 792 361	\$8 216 588	\$37 211 813
% of resource needs	72%	59%	63%	66%	2%	60%
Total Probable Funding (Not assured)	\$16 903 887	\$11 079 479	\$12 069 956	\$14 867 487	\$142 151	\$55 062 960
Funding gap (assured and probable)	\$0	\$1	\$2	\$1	\$0	\$4
% of resource needs	0%	0%	0%	0%	0%	0%

Commitments by the government and partners do not cover the needs of the programme for the next five years.

Immunisation campaigns and shared costs are completely covered for the entire projection period by probable funding.

9.4.3 Sources of funding

From Table 30 we can see that the bulk of the assured funding for the program for 2008-2012 comes from GAVI (50%) and the government (39%).

GAVI-secured funding primarily covers costs associated with introducing new vaccines. The apparent low level of secured funding from other partners, such as UNICEF and the WHO, is due to the fact that we do not yet know what their financial plans are for the coming years.

Table 32a: Projection of probable funding by partner at the country-level in US\$, 2008-2012

Sources	2008	2009	2010	2011	2012	2008- 2012
Government	\$59 540	\$61 288	\$689 979	\$22 086	\$65 040	\$897 933
WHO	\$4 973 352	\$1 117 386	\$976 372	\$2 623 736		\$9 690 846
UNICEF	\$11 870 995	\$9 900 805	\$10 329 489	\$12 146 066		\$44 247 355
GAVI			\$74 116	\$75 599	\$77 111	\$226 826
Total Funding Probable (not assured)	\$16 903 887	\$11 079 479	\$12 069 956	\$14 867 487	\$142 151	\$55 062 960

Table 32.b: Summary of current and future funding and sources of funds

Cost Category	Source of funds	Estimated funding per annum in US\$ (, 000)					
		Baseline Year 2006	Year 1 2008	Year 2 2009	Year 3 2010	Year 4 2011	Year 5 2012
Recurring costs							
1. Traditional vaccines	1 Government	430 132	513 826	419 466	419 342	434 971	447 150

2. New and underused vaccines	2. Government/GAVI	322 263	2 454 079	4 126 403	3 977 042	4 074 707	3 941 231
3. Injection supplies	3. Government	108 984	232 708	274 104	289 145	311 680	320 407
4. Personnel	4 Government	340 241	390 157	417 503	435 296	453 634	472 530
. Salaries for full-time personnel	5. Government	72 558	97 203	105 255	107 360	109 507	111 697
Per-diems for the advanced strategy/mobile teams	6. UNICEF/Local Partners/ Community	83 048	93 281	105 690	117 247	129 223	141 632
5. Per-diems for supervision	7. Government/ Partners	184 634	199 672	206 559	210 690	214 903	219 202
6 Transportation	8. Government	30 080	30 684	31 321	31 964	32 541	33 217
Fixed strategy and delivery of vaccines	9. Government	18 983	19 364	19 764	20 168	20 536	20 960
Advanced and mobile strategy	10. Partners	11 097	11 320	11 557	11 796	12 005	12 257
7. Maintenance and overhead	11. Government/GAVI	1 166 852	1 212 969	1 255 265	1 306 521	1 198 239	1 240 002
Cold chains	12. Government/GAVI UNICEF/WHO/FED	677 707	711 729	733 330	765 955	702 577	723 301
Other equipment	13. Government	56 107	59 540	71 403	81 022	26 927	\$38 592
Buildings	14. Government	433 038	441 699	450 533	459 544	468 734	478 109
8.Short-term training	15. Partners	93 860	119 570	72 663	74 116	75 599	77 111
9. Social mobilisation and IE	16. UNICEF	65 307	66 613	67 945	69 304	70 690	72 104
10. Disease control and surveillance	17. WHO	313 904	224 883	229 380	233 968	238 647	243 420
11.Programme management	18. Government	14 689	14 983	25 997	15 588	15 900	141 294
12. Other recurring costs	19. Government		98 757	21 229	21 653	22 086	22 528
TOTAL recurring costs		2 886 313	5 359 228	6 941 278	6 873 940	6 928 694	7 010 994
Routine Capital Costs							
1. Vehicles	1. Government/ Partners	70 031	3 782	61 288	21 639		65 040
2.Cold chain equipment	2. Government/GAVI UNICEF/WHO/FED	46 200	976 535	550 722	801 508	861 025	1 131 136
3.Other capital costs	3. Government	22 286	5 883	105 433	106 121	100 328	151 569

TOTAL Equipment		138 517	986 200	717 443	929 269	961 354	1 347 745
Campaigns							
1. Polio	1. WHO/UNICEF/ ROTARY/Government	2 250 757	4 185 762	1 316 566	1 147 003		
2. Measles	2. WHO/UNICEF/ /Government	2 068 099	3 700 768			4 131 894	0
3. Neonatal tetanus	4. WHO/UNICEF/ Government	0	9 238 247	9 701 626	10 158 860	10 637 908	0
GRAND TOTAL		7343686	23470205	18676913	19109071	22659850	8358739

Table 32b shows that a good portion of the funding for the programme remains probable, at around US\$ **55 062 960** for the entire period, of which more than 80% will come from UNICEF because of the MNT campaigns.

9.5 Gap analysis (not including shared costs)

This analysis will allow us to identify the critical points where the Government and its partners should focus their efforts to mobilise additional resources (Table 32).

One of the strategic directions of Chad's national healthcare policy is the improvement of quality healthcare services for women and children. Yet Chad's funding for the healthcare sector is below the WHO-recommended standards (10% of the State budget) and the commitment by the African Heads of State in Abuja (Nigeria) in 2001 during the Summit on AIDS, malaria, tuberculosis and other related infections (15%). According to administrative accounting sources in the MOPH, the portion of the State budget for this Ministry went from 8.44% in 2003 to 4.2% in 2006 and then 5.3% in 2007. Low mobilisation of financial resources from the State greatly limits the care offered and affects the health of the population.

State contributions to the total expenditures of routine EPI in 2006 were 53%. This does not take into account expenses for staff, maintenance, water, electricity and shared costs. In the required resources forecast, staff-related costs are the largest portion (95%), followed by vaccine acquisition (including new vaccines). Of course, GAVI will provide a portion of the payment for new vaccines, which will lighten the burden of costs for the State. Similarly, the State only provides staff salaries and generally does not cover benefits, leaving this expense to either the communities or to partners.

Overall, outside programme funding remains significant. There is a significant funding gap, as shown in the funding projections given in this cMYP, primarily for the costs of campaigns.

Because of this, the State has developed a partnership for funding healthcare with the populations and with development partners to increase the resources dedicated to the healthcare sector and to ensure sustainability of actions taken.

The EPI receives the continued support of the Government and its development partners (GAVI, WHO, UNICEF, WORLD BANK, ROTARY INTERNATIONAL, EUROPEAN UNION, CHAD RED CROSS, MSF, etc.), which are brought together within the Inter-Agency Coordination Committee that provides the resources necessary to conduct activities.

Table 33: Macro-economic indicators and financial viability

Macroeconomic Indicators and Financial Viability	2006	2008	2009	2010	2011	2012
Baseline Data						
GDP per capita (\$)	\$5	\$5	\$6	\$6	\$6	\$6
Total healthcare expenditures per capita (THE in \$)	\$6.5	\$10.2	\$10.0	\$12.0	\$14.3	\$14.6
Population	\$9 552 843	\$10 154 300	\$10 469 083	\$10 762 217	\$11 063 559	\$11 373 339
GDP (\$)	\$48 687 020	\$55 150 032	\$60 502 924	\$64 395 726	\$66 767 474	\$71 489 396
Total healthcare expenditures (THE in \$)	\$62 222 359	\$103 500 652	\$104 524 789	\$129 261 876	\$158 166 739	\$165 846 941
Total government health expenditures (GHE in \$)	\$24 888 944	\$41 400 261	\$41 809 916	\$51 704 750	\$63 266 696	\$66 338 777
Resource needs for immunisation						
Routine Immunization and Campaigns	\$7 343 686	\$23 470 205	\$18 676 913	\$19 109 070	\$22 659 849	\$8 358 739
Routine only	\$3 024 830	\$6 345 428	\$7 658 721	\$7 803 208	\$7 890 047	\$8 358 739
per child DTP3	\$12.7	\$22.7	\$25.7	\$24.9	\$24.5	\$25.3
% total healthcare expenditures						
Resource needs for immunisation						
Routine Immunization and Campaigns	11.8%	22.7%	17.9%	14.8%	14.3%	5.0%
Routine only	4.9%	6.1%	7.3%	6.0%	5.0%	5.0%
Funding gap						
With assured funding		16.3%	10.6%	9.3%	9.4%	0.1%
With assured and probable funding		0.0%	0.0%	0.0%	0.0%	0.0%
% total gvt. healthcare expenditures						
Resource needs for immunisation						
Routine Immunization and Campaigns	29.5%	56.7%	44.7%	37.0%	35.8%	12.6%
Routine only	12.2%	15.3%	18.3%	15.1%	12.5%	12.6%
Funding gap						
With assured funding		40.8%	26.5%	23.3%	23.5%	0.2%
With assured and probable funding		0.0%	0.0%	0.0%	0.0%	0.0%
% GDP						
Resource needs for immunisation						
Routine Immunization and Campaigns	15.08%	42.56%	30.87%	29.67%	33.94%	11.69%
Routine only	6.21%	11.51%	12.66%	12.12%	11.82%	11.69%
per capita						
Resource needs for immunisation						
Routine	\$0.77	\$2.31	\$1.78	\$1.78	\$2.05	\$0.73

Immunization and Campaigns						
Routine only	\$0.32	\$0.62	\$0.73	\$0.73	\$0.71	\$0.73

9.6 Priorities in financial viability strategies

Prioritising of resource mobilisation, access to funding, and rational management of funds is based on the financial and programme significance criteria of efficacy and feasibility.

X. PROGRAMME VIABILITY AND CMYP IMPLEMENTATION STRATEGIES

The financing strategy that the Ministry of Health adopted consists of making the EPI budget line items secure for purchasing vaccines and consumables, including fuel for supervision and the cold chain. There will be a grant to the MOPH for this and the funds will be transferred into an account in which mobilisation will be subject to streamlined procedures.

Thus the strategic funding plan will be centred on the following strategies:

- a) Strategy for mobilising reliable and adequate resources.
- b) Strategy for increasing the effectiveness with which resources are used.

10.1 Strategies for mobilising reliable and adequate resources

10.1.1 Strategies for mobilising internal resources

a) *At the State level*

As part of the Vaccine Independence Initiative (VII), the State is providing the funding to purchase routine EPI vaccines. The State has committed to devoting 10% of its budget to healthcare, in accordance with WHO recommendations. The Abuja Heads of State summit in April 2001, however, recommended allocating 15%. The national healthcare policy emphasizes prevention, in which EPI plays a role. As such, a larger and larger portion of the healthcare budget should be assigned to EPI.

Beginning in 2008, the State is planning to introduce new vaccines and will consequently increase the budget credits devoted to the purchase of vaccines and injection supplies.

The State must also continue to supply, each year, the budget line item "Supporting the fight against epidemics". Approximately 900 million FCFA are planned in 2007 to support the EPI in vaccines, immunisation consumables and cold chain consumables.

Mobilising all of these resources poses some problems, in terms of the prompt disbursement of funds to honour the various vaccine and consumables invoices. These problems are due to the burdensome administrative and financial procedures, and to the many State priorities.

To facilitate mobilisation of all of these resources, the following activities will be organised as part of the cMYP:

1. Joint communication with the Council of Ministers, to obtain specific facility in freeing funds.

2. Annual advocacy meetings with all parties involved in the State expenditure loop.

b) At the local collectives level

Local collectives participate in funding healthcare expenses, especially those related to EPI, through their investment budget. Unfortunately, their contribution situation not well known. However, with the advent of decentralisation, their participation will increase in light of the important role they play in managing local development. Efforts must be made to document the contributions of collectives so that these can be considered when preparing future plans.

c) At the community level

Apart from the physical activities that the community conducts in healthcare, such as contributing to the construction of enclosing walls for health centres, the community also participates in funding healthcare expenses through the system of healthcare cost recovery. A portion of the funds recovered is used to ensure operation of the cold chain and to purchase fuel for the advanced strategy.

d) At the private sector and NGO level

In addition to the supplementary sources of funding represented by the community and the local collectives, other non-state funding sources are asked to contribute. Improved coordination of NGO interventions will allow the resources of these groups to be channelled towards priority programmes, including EPI. The development of a partnership between the public and private healthcare sectors, both for-profit and non-profit, is an opportunity for EPI.

10.1.2 Strategies for mobilising external resources

For financing, the Government’s healthcare policy targets partnership, a joint effort between the state and technical and financial partners, to increase resources to the sector. This involves setting up a coordination and consensus framework with all partners. To achieve this, the partnership with technical and financial partners will be strengthened by improving ICC operations. By preparing and renewing a cMYP the support of GAVI to the Immunisation Services Support (ISS) is already guaranteed, i.e.: (i) introduction of the pentavalent and yellow fever vaccine; and (ii) strengthening the healthcare system (RSS).

10.1.3 Summary of strategies for mobilising reliable and adequate resources

The table below gives the main strategies, actions, parties responsible for implementation, estimated implementation costs, progress indicators and current indicator values.

Table 34: Summary of strategies for mobilising reliable and adequate resources

Main strategy	Actions	Responsible parties	Start date	Est. cost of implem.	Progress indicators	Current indic. value
	Call a meeting of the ICC to adopt the plan	Ministry of Public Health	September 2007	PM		

	Prepare the summary of the cMYP with programme costs and gaps	EPI Coord		PM		
	Have the MOPH actors involved in budget negotiations adopt the EPI cMYP	Secretary General of the MOPH		PM		
Advocacy for increased community contributions to EPI funding	Present the EPI cMYP to Regional Health Delegates	SG/MOPH	February 2008		Portion of community exp. in total programme exp.	ND
	Strengthen the consensus with external partners	Ministry of Public Health	Continuous	PM		
	Hold quarterly ICC meetings	Secretary General, Ministry of Public Health	Quarterly	PM		

10.1.4 Strategy for increasing the effectiveness with which resources are used

a) *Reducing the wastage rate*

Current wastage rates are quite high. By 2012, reduce the wastage rates to: 20% for reconstituted vaccines and 5% for non-reconstituted vaccines.

b) *Open vial policy*

The guidelines sent to health agents, monitoring of losses in 2006/2007, and health agent training in EPI management, in particular on the open vial policy, will surely have a positive effect on reducing vaccine wastage rates. This will in turn lead to a reduction in additional vaccine costs. In addition, formative supervision emphasizing the various aspects of the open vial policy will further strengthen efforts to reduce the wastage rate.

c) *Cold chain maintenance and vaccinator agent training in the use of the cold chain*

A proper policy for maintaining the cold chain will ensure better vaccine storage and thus a reduction in the wastage rate. This policy will considerably reduce the risk of cold chain equipment failure by emphasizing training for the agents that use it.

d) *Strengthening planning and management capacities at all levels*

Current healthcare reforms stress decentralisation and capacity strengthening at all levels. One of the goals of these reforms is to involve local partners and communities in the planning and management process, including effective delineations for health centres.

e) *Complying with immunisation programmes, especially advanced and mobile strategies*

Participation by mothers in immunisation sessions will improve with the involvement of the on-site actors, notably traditional tribal leadership, Committees, local NGOs, religious and opinion leaders and community groups.

10.1.5 Controlling the introduction of new vaccines

The pentavalent will be introduced beginning in the second half of 2008. It will be introduced gradually, and will involve 50% of the target in the first year. The introduction will primarily require:

1. training of healthcare agents
2. adaptation of management tools
3. creating adequate storage capacity where necessary
4. opening secondary district supply centres.

a) *Reducing the drop-out rate*

Routine administrative data on immunisation indicate a specific drop-out rate greater than 10%. This non-compliance will be improved through the following actions:

b) *Increasing EPI communications*

Strengthening the communication strategy will help to increase the participation rate in immunisation sessions. This strategy should target parents, and administrative structures and their divisions.

Interpersonal communication and the use of mobilising liaisons, traditional leaders and community radio will help strengthen communications.

c) *Implementing fixed, mobile and advanced strategies and the door-to-door strategy*

By combining these strategies we will be able to reach a maximum of targets.

d) *Reducing missed opportunities*

The strategy here consists of immunising all non-immunised children who come to a healthcare facility.

XI. MECHANISMS FOR IMPLEMENTING, MONITORING AND ASSESSING THE CMYP

The cMYP will be used as a baseline framework for the annual planning of programme activities. It will be implemented at all levels requiring mobilised resources.

Activities that require funding to be implemented will be addressed in technical files and requests sent to the government and its various partners. Other routine activities will continue as in the past. Supervisions will be organised, by level, in accordance with standards to support the implementation of activities.

Regarding monitoring/assessment: particular emphasis will be put on holding regular monthly monitoring meetings at the operation level, quarterly reviews at the intermediate level and twice-yearly reviews at the national level, in order to measure the progress towards achieving the objectives set forth in the cMYP.

The DQS currently being distributed will be one of the pillars to support data quality monitoring.

Immunisation data will be regularly checked by the ICC before being shared at the international level.

The cMYP will be updated every year on the basis of the activity implementation assessment for the past year and new overall priorities in the country.

XII. 2008 ACTION PLAN

	J	F	M	A	M	J	J	A	S	O	N	D	
Service provision	J	F	M	A	M	J	J	A	S	O	N	D	
Support revision of districts' micro plans													45
Provide continuing training for regional and district health delegation Management Teams on the new strategies and on injection safety													59
Extend establishment of performance contracts in all districts													
Support monitoring and formative supervision of immunisation activities													15
Reenergize the community participation bodies (social mobilisation committee, etc.) and involve them effectively in immunisation activities													33
Implement the national communication strategy													
Pursue integrating vitamin A and Mebendazole in the routine EPI and in SIA													650
Integrate insecticide-treated mosquito nets into routine EPI													
Support revision of SIA/Polio micro plans													1 77
Organize SIA/POLIO													112
Organise case-response SIA/POLIO													
Support surveillance of AFP cases													65
Implement the communication plan for SIA/POLIO													
Implement the pentavalent vaccine introduction plan													
Adapt immunisation management tools													
Revise data aids													
Train a pool of trainers on the use of the pentavalent vaccine													
Support preparing SIA/MNT micro plans by regional health delegations													
Train staff on how to promote clean births													
Organise SIA MNT in high-risk districts													4 29
Support supervision of staff in charge of assisted births													
Support communication in favour of clean births													
Support case-by-case and case-response surveillance of MNT cases													
Support revision of follow-up SIA/Measles micro plans													
Support case-by-case biological surveillance of measles													1 13
Extend the RED approach													1 4
Support searching for lost-to-follow-up													
Support reducing missed opportunities													
Support computerised vaccine management in all regional health delegations													
Monitor wastage rates using the immunisation data monitoring tool													PM
Supervise the effectiveness of applying the open vial													PM

