Data Collection Survey on Health Sector

Country Report
Lao People's Democratic Republic

October 2012

Japan International Cooperation Agency
(JICA)

KRI International Corp.

TAC International Inc.

HM
JR
12-120

Data Collection Survey on Health Sector

Country Report
Lao People's Democratic Republic

October 2012

Japan International Cooperation Agency
(JICA)

KRI International Corp.

TAC International Inc.

Exchange Rate

US$ 1=8827.8 Lao Kip

（JICA rate, July, 2012）

This report is prepared to support JICA's country operation in health through strategic programming. The contents, however, may need to be supplemented with the latest and more detailed information by the readers since the report is mainly based on literature review and not on field study, with the exception of some countries.

Foreword

Background

The current situation surrounding the health sector in developing countries has been changing, especially at the start of the 21st century. Based on the recommendations from the concept of "Macroeconomics and Health"[1], development assistance for health has greatly increased to accelerate efforts to achieve the Millennium Development Goals (MDGs) by 2015. The development assistance for health has risen sharply from USD 10.9 billion to USD 21.8 billion in 2007[2]. Moreover, development assistance was harmonized by the common framework developed at the three consequent high-level forums in Rome (2003), in Paris (2005) and in Accra (2008).

Regardless of such favorable environmental changes for the health sector in developing countries, the outcomes do not seem to reach the level of expectation in many countries. Many developing countries, particularly Sub-Saharan African countries, will not achieve some of their MDGs 4 (Reduce child mortality), 5 (Improve maternal health) and 6 (Combat HIV/AIDS, malaria and other diseases) by 2015. Therefore, while raising more money for health is crucial for lower-income countries striving to move closer to universal coverage[3]; "More Money for Health[4]", it is just as important to get the substantial health gains out of the resources available; "More Health for Money[5]". Efficiency is a measure of the quality and/or quantity of output of services for a given level of input, and improving efficiency should also be seen as a means of extending coverage for the same cost and the improved health outcomes.

Considering this situation surrounding the health sector in developing countries, in a recent movement of its development assistance work, JICA has been working on country-based analytical work. This consists of macro level and sector wide analytical work aiming to clarify JICA's aid direction in each country by looking at priority areas of concern and aid mapping. The purpose of the Data Collection Survey on Health Sector is to contribute to JICA's analytical work efforts. In the past, JICA's analytical efforts were concentrated on the project planning purpose, as a consequence, information gathered in such analytical works were naturally limited to be around the particular projects. It is therefore thought to be important for JICA to conduct a country-based health sector review to gather complete information and analyze the whole sector to learn about the situation of the country and identify high priority problems and issues to be tackled in the health system.

Objectives of the Study

The key to the formulation of a good project is having conducted thorough sector reviews. Good sector reviews and analyses help us to understand the health situation and its determinants, and the capacity for health project implementation in the countries. They also help us to contribute to the countries for identifying the feasible projects in the context of priorities and developing the necessary policies and strategic planning for the health service delivery. It is also necessary to conduct such health sector review studies on a regular basis in order to develop and implement effective and efficient health projects. Based on this concept, JICA decided to carry out the sector review studies of 23 selected countries. The objectives of the sector review are to give recommendations to JICA on the aid direction for the health sector in each country, and to improve strategic approaches and the efficiency of aid cooperation.

Structure of the Report

The health sector study country report consists of seven chapters. Chapter 1 is the summary of the socio-economic situation of each country. Chapter 2 is an analysis of the national health policy, strategic approaches, and plans. Chapter 3 describes the health situation of each country to show the priority health problems by using health information and data. Chapter 4 is an analysis of the health service delivery function of each country, while Chapter 5 is an analysis of other functions of the country's health system namely: human resources for health, health information systems, essential medical products and technologies including the health facilities, health financing, and leadership and governance. Chapter 6 is an analysis of the development partners' assistance and cooperation. Based on the above analysis, Chapter 7 provides recommendations to JICA on the strategic areas of cooperation and its approaches.

[1] WHO announced "Macroeconomics and Health: Investing in Health for Economic Development" in December, 2000. This regards Health is an intrinsic human right as well as a central input to poverty reduction and socioeconomic development and the process helps place health at the centre of the broader development agenda in countries.
[2] Ravishankar N., Gubbins P. Cooley J.R., et. al; June 2009; Financing of global health: tracking development assistance for health from 1990 to 2007; the Lancet 373:2113-2132
[3] According to WHO, Universal coverage (UC) is defined as ensuring that all people have access to needed promotive, preventive, curative and rehabilitative health services, of sufficient quality to be effective, while also ensuring that the use of these services does not expose the user to financial hardship. (http://www.who.int/health_financing/universal_coverage_definition/en/index.html)
[4] In the World Health Report 2010 (WHO), the report advocates it with the following concrete three suggestions as the requirements; 1) Increase the efficiency of revenue collection, 2) Reprioritize government budgets, and 3) Innovative financing. As the forth suggestion, it advocates increasing development aid and making it work better for health.
[5] The World Health Report 2010 also suggests the needs of improving the efficacy in the health systems and eliminating the inefficiency/waste will enable the poor countries to improve the availability and quality of the services.

Abbreviation and Acronyms

ACT	Artemisinin-based Combination Therapy
ADB	Asian Development Bank
AFTA	ASEAN Free Trade Area
ART	Anti-retroviral Therapy
ARV	Anti-retroviral Drug
BCC	Behavior Change Communication
BMI	Body Mass Index
CBHI	Community Based Health Insurance
CCM	Country Coordinating Mechanism
DCCA	District Committee for Control of AIDS
DHP	Department of Hygiene and Prevention
DOTS	Directly Observed Therapy Short-course
EPI	Expanded Programme on Immunization
EU	European Union
FAO	Food and Agriculture Organization
FDD	Department of Food and Drug
GDP	Gross Domestic Product
GFATM	The Global Fund to Fight AIDS, Tuberculosis and Malaria
GMP	Good Manufacturing Practice
GNI	Gross National Income
HEF	Health Equity Fund
HISSP	Health Information System Strategic Plan
HIV	Human Immunodeficiency Virus
HMIS	Health Management Information System
HPIMS	Health Personnel Information Management System
IEC	Information, Education and Communication
ITN	Insecticide-Treated Mosquito Net
IUD	Intrauterine Device
JICA	Japan International Cooperation Agency
JOCV	Japan Overseas Cooperation Volunteers
KOICA	Korea International Cooperation Agency
LDC	Least Developed Country
LECS	Lao Expenditure and Consumption Survey
LMIS	Logistics Management Information System
LRHS	Lao Reproductive Health Survey
LSIS	Lao Social Indicator Survey
MAF	Ministry of Agriculture and Forestry

MCH	Maternal and Child Health
MDG~~s~~	Millennium Development Goal~~s~~
MICS	Multiple Indicator Cluster Survey
MNCHN	Maternal, Neonatal and Child Health and Nutrition
MOE	Ministry of Education
MOU	Memorandum of Understanding
MPSC	Medical Products Supply Center
MSM	Men who have sex with men
MTU	Medical Teaching Unit
NCCA	National Committee for Control of AIDS
NGO	Non Governmental Organization
NSAP	National Strategic and Action Plan
NSEDP	National Socio-Economic Development Plan
PCCA	Provincial Committee for Control of AIDS
PHC	Primary Health Care
PMTCT	Prevention of Mother to Child Transmission
SASS	State Authority of Social Security
SBA	Skilled Birth Attendant
SCWMF	Sector Common Work Plan/Monitoring Framework
SISEA	Surveillance and Investigation of Endemic Situation in South East Asia
SSF	Single Streams of Funding
SSO	Social Security Organization
SWC	Sector-wide Coordination Mechanism
SWG	Sector Working Group
TFR	Total Fertility Rate
TWG	Technical Working Group
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USP	United States Pharmacopeia
VCT	Voluntary Counseling and Testing
WB	The World Bank
WFP	World Food Programme
WHO	World Health Organization

Source: http://www.freemap.jp/download.php?a=asia&c=asia_laos_all

Lao People's Democratic Republic

Summary

1. Since 1975, the Lao People's Democratic Republic ('Laos' hereafter) has been politically stable under the one-party leadership by the Lao People's Revolutionary party, and has undergone steady economic development. Gross National Income (GNI) per capita increased five times in 2010 compared to 1990. However Laos is still positioned as one of the least developed country (LDC), ranks 138th out of 187 countries in the human development index and is in the medium human development category.

2. Under the '7th five-year National Socio-Economic Development Plan", a "Health Strategy up to the Year 2020" and "7th five-year Health Sector Development Plan" have been developed in the health sector. The 7th five-year Health Sector Development Plan outlines six priority Programmes including strengthening hygiene and prevention in the areas of maternal and child health: 1) Hygiene and prevention 2) Quality improvement of health services, 3) Food, Drug and medical equipment, 4) Human resource development 5) Research and training 6) Health administration.

3. In Laos, the proportion of noncommunicable diseases is still less than regional average, but tends to increase every year. Regarding Millennium Development Goals (MDGs), communicable diseases have shown a comparatively steady progress toward the targets. In the area of child health there has been improvement in under-five mortality rate and infant mortality rate but the progress in improving nutritional status has been slow. Maternal mortality ratio remains high and achievement of the targets by 2015 it considered to be difficult. There is also a delay in improving indicators on access to safe drinking water.

   Laos remains a 'low HIV prevalence country' in the Greater Mekong Sub-region but prevalence rate among young female HIV is increasing. The recent economic growth in Laos will further promote tourism and peoples' movement, which is expected to result in increasing potential risk of contact with high risk groups. The situation of tuberculosis (TB) in Laos is relatively good but the TB prevalence rate has not seen any significant improvement. Malaria is no more the leading cause of death but one-third of the total population still live in the high-risk areas. In addition, there is a regional difference in malaria epidemic, with reported malaria cases concentrated in the southern part of the country.

   Although noncommunicable diseases tend to increase, policies and strategies have not been developed yet. It is urgent to collect and analyse epidemiological data, strengthen awareness activities, and retain and train human resources who carry out necessary measures.

4. Regarding the current status of delivery system and utilization of health service, the health service utilization rate in rural areas is lower than in urban areas. Child immunization rates are low compared to other countries in the region. There are regional gaps within the country and physical and economical access issues including poverty and inadequate infrastructure such as roads also play a role. Supplementary services such as outreach services fail to address access issues, which adversely impacts child health. Apart from poverty and traditional values and habits, poor knowledge among mothers are causes for poor access to necessary services.

5. Within the health system, the shortage of health human resources and uneven allocation of human resources in urban areas have been serious problems. As for midwives, it is planned to train 1,500 midwives by 2015. In health financing, a new policy of free delivery service and free of charge hospitalization for children under five has been introduced, which is expected to improve access to services for low-income people. The Ministry of Health plans to achieve universal health insurance by 2020, however the coverage ratio among the total population was still only about 12%[6] as of 2010. Regarding the health information system, a Health Management Information System (HMIS) has been introduced in 2004. Since the Sector Common Work Plan/Monitoring Framework has been introduced as the monitoring tool of the status of the 7th Health Sector Development Plan, the Ministry of Health and Development and its partners are able to monitor the progress of the plan. In terms of health facilities, the functioning of district hospitals is weak due to lack of personnel and equipment. Since the referral system is not functioning well, patients directly visit higher level facilities to look for better service. An increasing number of patients visit health facilities in neighbouring countries.

6. A coordination mechanism has been established in the health sector, and its management has been strengthened with support from JICA technical cooperation project "Capacity Development for Sector-wide Coordination in Health (and Phase II)". The working groups are set up in accordance with the six priority issues of the 7th Five Year Health Sector Development Plan, which contributes to more efficient and effective support by avoiding overlapping issues and targets areas between partners.

7. Prioritising cooperation to strengthen maternal and child health is recommended. In regards to the improvement of access to health services, Japan is advised to support the improvement of infrastructure, comprehensive cooperation for improvement in quantity and quality of health service provision, preferential treatment for vulnerable people such as women and the poor in general and establishment and improvement of a health insurance system. Another important intervention is the strengthening of the health sector through human resource development, specifically though supporting teaching hospitals, strengthening health administrative management, supporting medical equipment to teaching hospital as part of health human resource development, and promoting community participation in expanding health service.

[6] As of July 2012, the coverage of four schemes is 17%.

JICA Data Collection Survey on Health Sector

Country Report
Lao People's Democratic Republic

Table of Contents

List of Figures and Tables

Chapter 1 Country Situation

The Lao People's Democratic Republic ('Laos' hereafter) is located in the center of Indochina and its total land area is 240,000 km2. Laos is a landlocked country surrounded by five countries: Cambodia, China, Myanmar, Thailand and Vietnam. The total population is about 6.2 million, which is made up of 49 ethnic groups including the Lao (about half of the total population) [1].

Since 1975, Laos has been politically stable through the one-party leadership by the Lao People's Revolutionary party, and has undergone steady economic development. Table 1-1 shows the basic indicators on Laos. Its Gross National Income per capita (GNI) was US$ 1,040 in 2010, and increased by 5 times compared to US$ 200 in 1990. However Laos is still positioned as one of the least developed countries (LDC). Laos ranks 138th out of 187 countries in the human development index and is in the medium human development category [1].

Table 1-1 Main Indicators in Laos

Indicators	Value	Year
Total Population	620millions	2010
Population increase rate	1.4%	2010
Life expectancy at birth	67.1	2010
Crude birth rate (per 1000)	22.8	2010
Crude Mortality Rate (per 1000)	6.3	2010
Gross National Income (GNI)	1,040	2010
Economic Growth Rate	5.1%	2010
Primary school net allowance	89.0%	2008
Human Development Index/rank	0.52/138th*	2011
Poverty gap at $1.25 a day (PPP) (%)	9.0%*	2008

Source: World Development Indicators (May 2012) [2]
*Human Development Report 2011 (UNDP) [3]

The administrative units of Laos consist of 16 provinces and one capital (Vientiane). The provinces are composed of several districts, which are composed of villages. Table 1-2 indicates the square meters and total population of each province.

Table 1-2 Total Area and Total Population of Each Province and City (2009)

	Province	Square Meters(km²)	Population (2009)		Province	Square Meters (km²)	Population (2009)
Central	Bolikhamxai	14,863	256,000	North	Bokeo	6,196	162,000
	Khammouan	16,315	368,000		Houaphan	16,500	310,000
	Savannkahet	21,774	891,000		Louang Namtha	9,325	160,000
	Vientiane City	3,920	754,000		Luang Prabang	16,875	440,000
	Vientiane	21,500	467,000		Oudomxay	15,370	293,000
	Xiangkhoang	17,500	264,000		Phongsali	16,270	174,000
South	Attapu	10,320	124,000		Xaignabouli	16,389	367,000
	Champasak	15,415	644,000				
	Salavan	10,691	358,000				
	Xekong	7,665	95,000		Whole Country	236,888	6,127,000

Source: National Statistics Centre of the Lao PDR [4]

Chapter 2 Development Policies and Plans

2.1 National Development Policy

2.1.1 The 7th Five-year National Socio-Economic Development Plan (NSEDP) 2011-2015

The NSEDP has been developed every five years since 1981, and an open-market policy called "Chintanakan Mai" (New Thinking) was introduced in 1986. The 7th NSEDP was approved by the national assembly in June 2011 with the following four main targets: 1) Ensure continuation of national economic growth with stability (GDP growth rate 8%, GDP per capita US$ 1,700), 2) Achieve the Millennium Development Goals by 2015 and graduate the country from the least developed country (LDC) status by 2020, 3) Ensure the sustainability of economic development with cultural and social progress, preserving natural resources and preserving the environment and 4) Ensure political stability, peace and maintenance of social order and improve the role in the international community [5].

The main indicators related to health of the 7th NSEDP are as follows.

- Mortality rate of children below five years: 70 (per 1,000 live births)
- Infant mortality rate: 45 (per 1,000 live births)
- Children below five years that are underweight: <22%
- Maternal mortality ratio: <260(per 100,000 live births)
- 80% of population having access to clean water , 60% of population having access to sanitary toilet facility
- Achievement of MDGs targets on Malaria, TB and HIV/AIDs
- The average life expectancy: 68 (male:66, female:70)

2.2 Health Sector Development Plan

2.2.1 Health Strategy up to the Year 2020

Health Strategy up to the Year 2020 was discussed at a health sector round table meeting in 2000 and outlined the national goal as follows: "Free the health care service in Laos PDR from the state of underdevelopment, ensure full health care service coverage, justice and equity in order to increase the quality of life of all Lao ethnic groups". The strategy builds on four basic concepts and six priority programmes (Table 2-1) [6].

Table 2-1 Priority Programmes of the Ministry of Health

1	Health prevention and promotion
2	Treatment and rehabilitation
3	Protection of the patient
4	Human resource development
5	Health operational research and legislation
6	Health Administration

Source: Health strategy up to the Year 2020 [6]

2.2.2 The 7th Five-year Health Sector Development Plan (2011-2015)

Based on NSEDP and Health Strategy up to the Year 2020, the 7th Health Sector Development Plan (2011-2015) summarized concrete interventions in the health sector. In the plan, the priority areas include six programmes as shown in Table 2-2.

Table 2-2 Priority Programmes of the 7th Five-year Health Sector Development Plan (2011-2015)

	Programme / Sub Programme	Budget (Million US$)	Main activities
1	**Hygiene, prevention and Health promotion**	**485.0**	
	Maternal and child health	148.3	Providing Integrated maternal and child health service, Safe motherhood and family planning, immunization, free delivery and care of children under five
	Nutrition	12.0	Supply of Vitamin A, iron, oral rehydration, outreach services to remote area
	Health Education	4.3	Construction of National Health Education/Training center, Radio programme
	Water and Environmental Sanitation	185.1	Supply clean water and sanitation facilities in rural areas
	Malaria, Parasite and Insect control	27.4	Malaria and Dengue fever control
	AIDS and sexually transmitted infections	54.2	Prevention activities, care for the infected person
	Tuberculosis Control	17.3	Human resource development related to TB control, TB diagnostics and laboratory strengthening
	Infection prevention and control measures	22.7	Cross-border disease control, Surveillance and Investigation of Epidemics in South-East Asia (SISEA)
	Leprosies control	13.7	Improvement of facilities and services
2	**Quality improvement of Health services (treatment and care)**	**336.7**	Hospital construction (Vientiane), Construction and improvement of services at District hospital and health center
3	**Food, Drug and medical equipment**	**46.9**	Construction of medicine factory, food analysis center, traditional medicine factory
4	**Human resource development**	**105.3**	Develop and strengthen health human resource, School construction/maintenance, skill birth attendant development
5	**Research, training and management**	**7.5**	Research/survey and relevant training
6	**Health administration (finance, planning and information system)**	**226.3**	Staff salaries, establishment of community based health insurance, improvement of health information system

Source: The 7th five-year Health Sector Development Plan 2011-2015 [7]

Under this plan, there are specific targets to be achieved by 2015 as shown in Table 2-3.

Table 2-3 Targets of the 7th Five-year Health Sector Development Plan 2011-2015

Indicators	Targets
Maternal mortality ratio (per 100,000 live births)	260
Infant mortality rate (per 1,000 live births)	45
Under five mortality rate (per 1,000 live births)	55*[7]
Population having access to an improved water source (%)	69
Population having access to improved sanitation (%)	54
Malaria, TB, HIV/AIDs control	No target
The average life expectancy	68.3

Note: *Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services 2009-2015 [12]

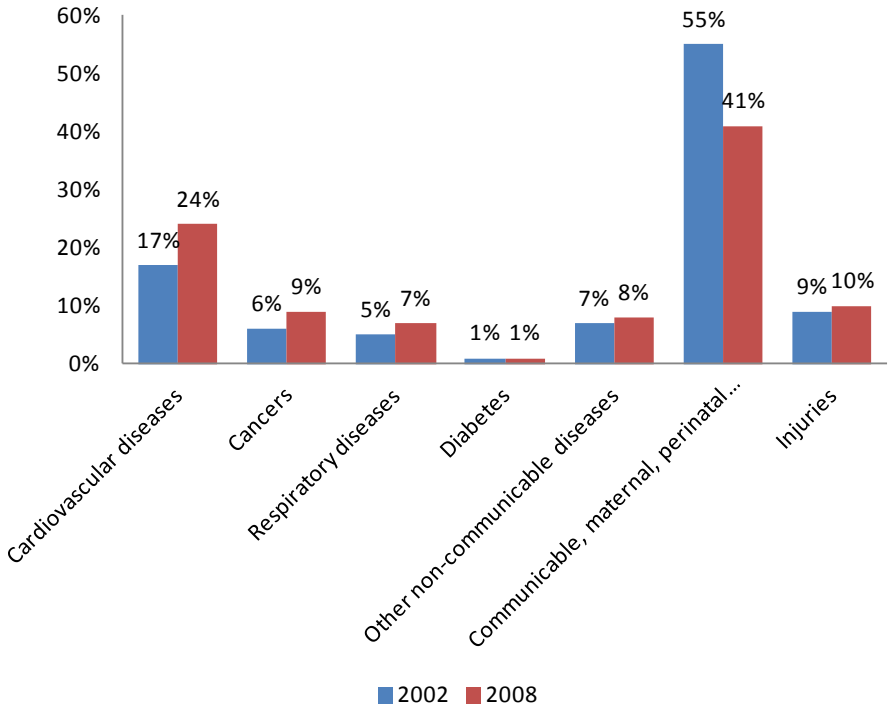
Source: The 7th five-year Health Sector Development Plan 2011-2015 [7]

[7] The target is 70 in the 7th five-year Health Sector Development Plan, however the Ministry of Health, according to the "Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services 2009-2015", recognized 55 as its target.

Chapter 3 Health Status of the People

3.1 Overview

Looking at the current disease pattern of Laos, non-infectious diseases accounted for 48% (2008) [8]. This figure is still lower than the regional average of 76%[8] [9] but tends to increase every year. Figure 3-1 shows the main causes of deaths. It is recognized that the incidence of non-infectious diseases including cardiovascular disease, cancer, increased from 2002 to 2008.



Source: WHO. Mortality and burden of disease [8]

Figure 3-1 Causes of Deaths by Year

As regards to the Millennium Development Goals (MDGs) on health issues, communicable disease area (Goal 6) has shown a comparatively steady progress towards the targets. In children's health (Goal 4), there has been improvement in under-five mortality rate and infant mortality rate but the progress in improving nutritional status (Goal 1) has been slow. As for material health indicators (Goal 5), it will be difficult to achieve the targets by 2015. In addition, there is a delay in improving indicators on access to safe drinking water (Goal 7). Table 3-1 shows the summary on the expected achievement of health related MDG targets according the progress report of MDGs that was compiled jointly by the Lao government and UN agencies [10].

[8] East Asia and Pacific countries (only developing countries)

Table 3-1 Progress of Health-related Millennium Development Goals

MDG Indicators	1) Baseline	2) Status	3) 2015 Target
MDG1 Eradicate Extreme poverty and hunger			
Prevalence of underweight in children under five years of age (%)	44(1993)	31.6(2006)	22
Prevalence of stunting in children under five years of age (%)	48(1993)	47.6(2006)	34
MDG4 Reduce child mortality			
Under 5 mortality rate(per 1000 live births)	170(1995)	54(2010)	55
Infant mortality rate(per 1000 live births)	104(1995)	42(2010)	45
MDG5 Improve maternal health			
Maternal mortality ratio (per 100,000 live births)	650(1995)	405*(2005)	260
Birth attended by skilled health personnel (%)	14(1994)	20(2006)	50
Antenatal care coverage – at least one visit (%)	-	35(2006)	60
Contraceptive prevalence (%)	20(1994)	38(2005)	55
MDG 6 Combat HIV/AIDS, malaria and other diseases **			
HIV prevalence among general population (%)	0.06(2001)	0.2	<1
Adults and children with advanced HIV infection receiving antiretroviral therapy (%)	48(2006)	92	>90
Death rate associated with malaria (per 100,000 population)	9(1990)	0.4(2006)	0.2
Prevalence and death rates associated with TB (per 100,000 population)	472(1990)	306(2005)	240
Proportion of TB cases under DOTs			
- Detected	24(1995)	72(2005)	70
- Cured	72(1995)	90(2005)	85
MDG7 Ensure environmental sustainability			
Proportion of people with sustainable access to improved drinking water source (%)	38(1990)	57(2008)	69
Proportion of people with sustainable access to sanitation facilities (%)	8(1990)	53(2008)	54

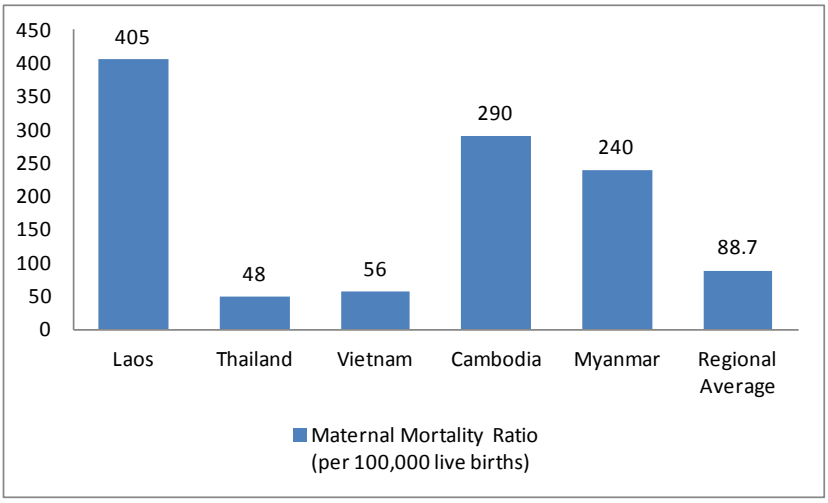
Source: 1) &3): The Government of Lao PDR and the United States. Accelerating Progress Towards the MDGs [10]
2) WHO. Global Health Observatory [11], however the figures of 2) Status of MMR at MDG5 and 2) Status (all) of MDG6 and MDG 7 were extracted from Accelerating Progress Towards the MDGs [10]

3.2 Maternal and Child Health

3.2.1 Mothers' Health

In Laos, the maternal mortality ratio was 4059 (per 100,000 live births) in 2005 and improved greatly comparing to 1,200 in 1990 and 790 in 2000. However, the mortality rate is much higher than that of neighbouring countries and the regional average (Figure 3-2). Among the obstructive factors are a low contraceptive prevalence rate, a low proportion of births attended by skilled health personnel and/or at medical facilities, limited access to antenatal and postnatal care and emergency obstetric care [12]. In addition, poverty causing food shortages and malnutrition also affects the maternal health of the poor.

[9] According to some international statistics the maternal mortality ratio was 580 in 2008, however this report accepts the data of the Ministry of Health (2005) which has been widely adopted by relevant agencies in Laos.



Source: Millennium Development Goals Database [13], Ministry of Health (Laos indicators)

Figure 3-2 Maternal Mortality Ratio [10]

3.2.2 Children's Health

As mentioned in 3.1, infant mortality rate and under five mortality rate have declined steadily and already achieved the MDG targets (Table 3-2). However, while the rates of Thailand and Vietnam are lower than the regional average, the rates are still much higher in Laos (Figure 3-3). In Laos, infant mortality accounts for 37 % of under five mortality rate. The Ministry of Health reports that the major causes of deaths of infant mortality are premature birth and low birth weight, neonatal infection, birth asphyxia, birth trauma and congenital abnormality [12].

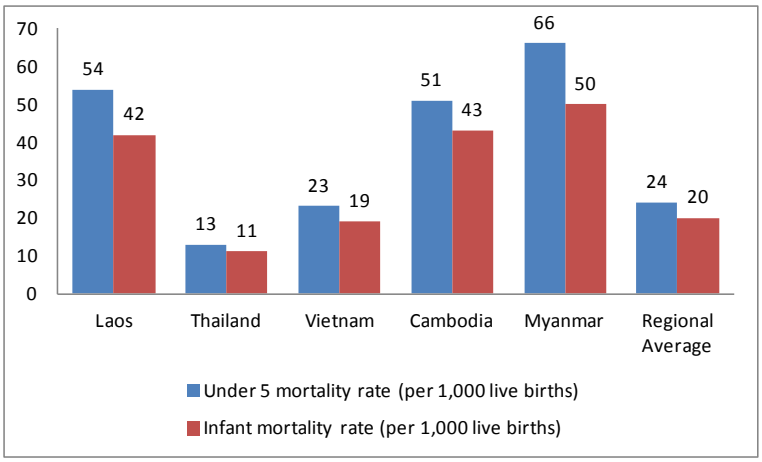
According to Lao Reproductive Health Survey 2005, which was supported by UNFPA, the infant mortality rate is correlated with the attributes of mothers. For example, the mortality rate of infant born to mother with high education level[11] and living in urban and central area is low, while the infant mortality is high for mothers living in rural areas without road access, in southern and northern regions, and whose education background is less than primary education. In particular, there are gaps in infant mortality rate and under five mortality rates related to mothers' educational level. As a result gaps in both rates are more than double between mothers without education and mothers with upper secondary education [14].

Table 3-2 Infant Mortality Rate and Under Five Mortality Rates

Indicators	1)Baseline	2)Status (2010)	3)2015 Target
Infant mortality rate (per 1,000 live births)	104(1995)	42(2010)	45
Under five mortality rate (per 1,000 live births)	170(1995)	54(2010)	55

Source: 1) &3) The Government of Lao PDR and the United States .Accelerating Progress Towards the MDGs [10]
2) Millennium Development Goals Database [13]

[10] Indicators in Lao are from 2005, others are from 2008
[11] Secondary education, which is equivalent of Japanese lower secondary and upper secondary



Source: Millennium Development Goals Database [13]

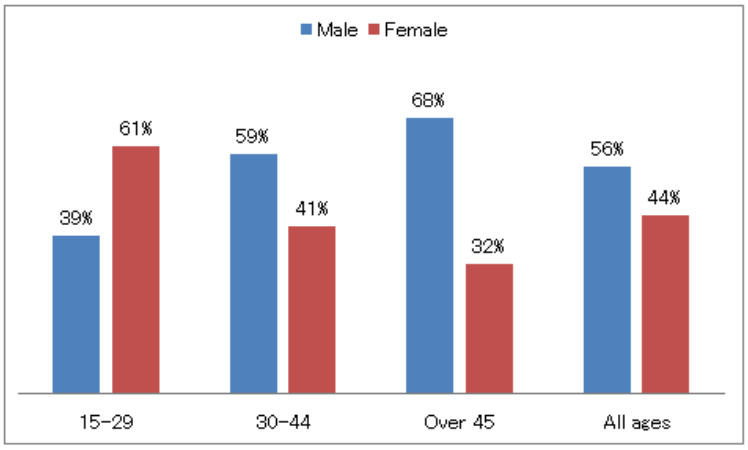
Figure 3-3 Infant Mortality Rate Comparing to Surrounding Countries (2010)

3.3 Situation of Infectious Diseases

3.3.1 HIV/AIDs

(1) Overview

Estimated prevalence of HIV among adults aged 15 to 49 in Laos was 0.2% in 2009 and Laos remains a 'low HIV prevalence country' in the Greater Mekong Sub-region[12] [15]. The estimated number of people living with HIV (all ages) was 8,000 in 2009. About 60% of HIV infected people belong to the age group of 25 to 39 years old and as Figure 3-4 shows, men are more likely to be HIV-infected as they get older. Since the beginning of 2000s, HIV cases in the younger age group have shifted to women, which indicates that young women have become a vulnerable group to HIV infection and have become the threat of infection [16].



Source: Laos PDR UNGASS 2010 Country Progress Report [16]

Figure 3-4 Percent of Adult with HIV by Sex and Age Groups (1990-2009)

(2) HIV prevalence by socio-economic characteristics

HIV prevalence has been concentrated in Savannakhet Province (40%), Vientiane city (33%), Champasak Province (9.8%). These provinces are located on the borders of neighbouring countries[13] and characterized

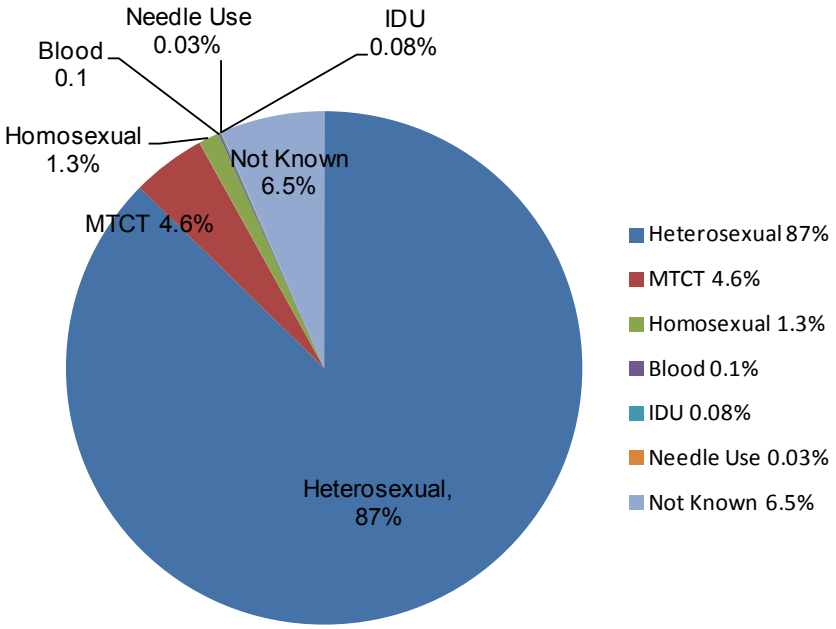
[12] Infection rates of the neighboring countries were 1.3% in Thailand, 0.4% in Vietnam, 0.5% in Cambodia and 0.6% in Myanmar in 2009.

[13] Savannakhet shares the border of Thailand and Vietnam, Vientiane with Thailand, and Champasack with Thailand and Cambodia.

by cross border population movement of Laos citizens and foreign migrant workers. This is also reflected in the fact that migrant worker accounted for 19 % of HIV prevalence.

As shown in Figure 3-5, the main transmission is through heterosexual contact (87%). High risk group include migrant workers, female sex workers, men who have sex with men (MSM) and injecting drug users. Injecting drug users have been rapidly increasing among female sex workers and migrant workers. In Laos, there is almost no research on the relationship between drug abuse and HIV infection.

The recent economic growth in Laos will further promote tourism and peoples' movement, which is expected to result in increasing potential risk of contact with high risk groups, causing a growing exposure to the threat of HIV infection.



Source: Laos PDR UNGASS 2010 Country Progress Report [16]

Figure 3-5 Mode of Transmission of HIV Infections

3.3.2 Tuberculosis

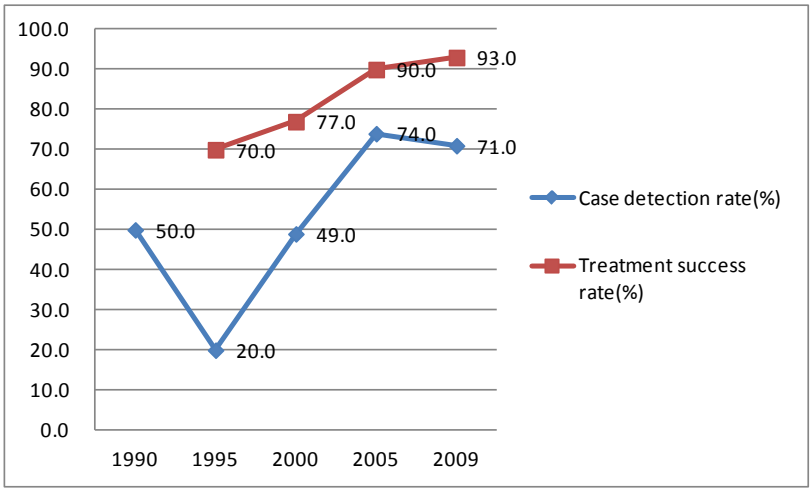
The tuberculosis prevalence rate in Laos was 131 per 100,000 population as of 2009. The number of new smear-positive patients was 3,119 in 2010 (Table 3-3) [17]. Although the number has increased there has been a steady improvement in treatment success rate, which is over the WHO target of 85%. The case detection rate has been decreasing in recent years and reached the WHO target of 70% (Figure 3-6). The countries bordering Laos (China, Thailand, Vietnam, Cambodia and Myanmar) are included in the 22 high TB burden countries[14]. Taking this into account, the situation of Tuberculosis in Laos is a relatively good one. However, TB prevalence rate has not shown a significant improvement in recent years, and there is the need to further intensify TB control measures.

[14] Afghanistan, India, Indonesia, Uganda, Ethiopia, Cambodia, Kenya, Congo, Zimbabwe, Thailand, Tanzania, China, Nigeria, Pakistan, Bangladesh, the Philippines, Brazil, Vietnam, South Africa, Myanmar, Mozambique, Russia

Table 3-3 Trends of Number of New Smear-Positive Patient and TB Prevalence Rate

	1990	1995	2000	2005	2009
Number of new smear-positive patient		478	1,526	2,801	3,119 (2010)
Prevalence rate per 100,000 population	158	182	152	129	131

Source: WHO Report 2011. Global Tuberculosis Control (number of new smear-positive patient) [17]
Millennium Development Goals Database (TB prevalence rate) [13]



Source: WHO Report 2011. Global Tuberculosis Control (Case detection rate) [17]
Millennium Development Goals Database (Treatment success rate) [13]

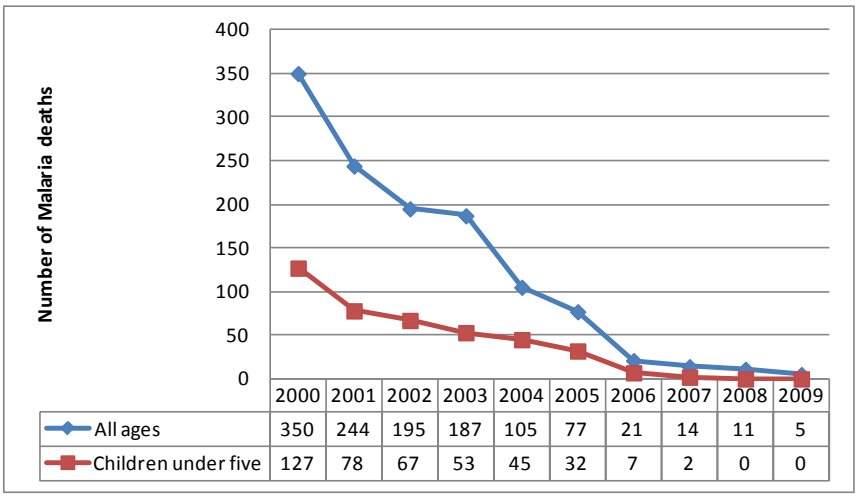
Figure 3-6 Trend of Case Detection Rate and Treatment Success Rate (1990-2009)

3.3.3 Malaria

Malaria prevalence rate in Laos was 327 per 100,000 population in 2008 [13]. Compared to neighbouring countries, it is higher than that of Vietnam but is almost the same level of Thailand and much lower compared to Cambodia and Myanmar[15]. Looking at the trend of Malaria deaths, the number of malaria deaths in children under five and all ages have decreased rapidly and is no longer the leading cause of death (Figure 3-7).

Despite such achievements, nearly 1.9 million people, one-third of the total population, still live in high risk areas. In addition, reported malaria cases are concentrated in the southern part of the country including Sekon province with the highest rate, followed by Attapu, Savannakhet and Sarawan. This shows that there is a regional difference in malaria epidemic [18].

[15] Malaria prevalence rate in each country, Vietnam 55, Thailand 322, Cambodia 1798, Myanmar 7,943 (per 100,000 population)



Source: World Malaria Report 2010 [18]

Figure 3-7 Trend of Number of Malaria Deaths (2000-2009)

3.4 Nutrition

3.4.1 Nutritional Status of Children

Child health indicators have shown improvement such as in under five mortality rate and infant mortality rate, however improvement of nutrition status has been delayed. Table 3-4 shows the nutritional status of children under five, confirming that there has no significant improvement in the rate of underweight since 1990s and that further efforts are required to reach the target by 2015. The rate of stunting too is still high, which causes Laos to rank among the 18 countries[16] with the highest prevalence of stunting [19]. There has been progress in reducing wasting to achieve the target, but there is a delay in improving underweight and stunting. This indicates that children suffer from chronic malnutrition [20].

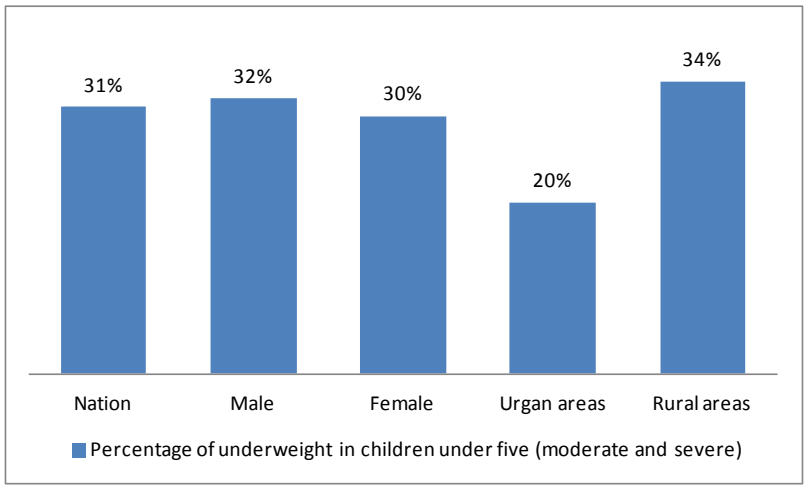
Table 3-4 Malnutrition Among Children Under Five

Indicators	1993 (%)	2000 (%)	2006 (%)	2015 Target (%)
Underweight	44	40	37	22
Stunting	48	42	40	34
Wasting	-	-	6	4

Source: Millennium Development Goals Progress Report Laos PDR 2008 [21]
The data of wasting is from National Nutrition Policy [22]

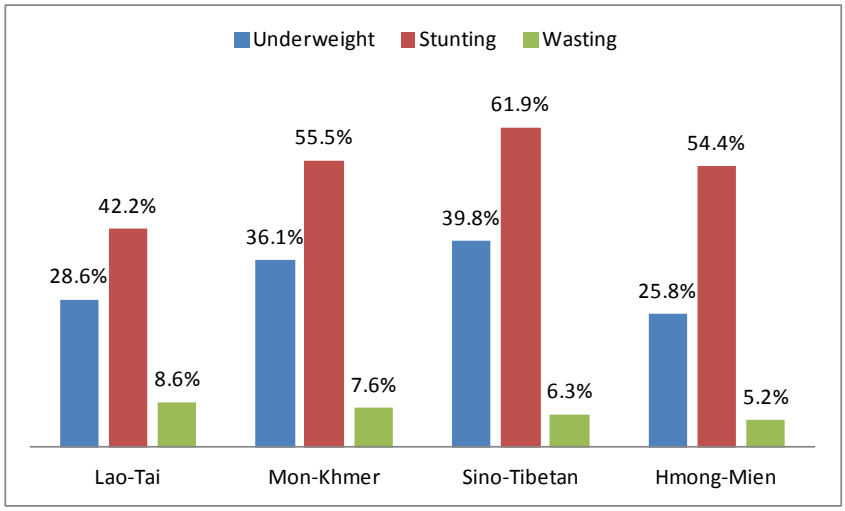
Comparing the prevalence of underweight in children under five by sex and region, there is no big gender difference but there is a significant difference between urban areas and rural areas (Figure3-8). Figure 3-9 shows the comparison of malnutrition status by ethno-linguistic groups. The figure shows that there is a maximum 20% difference in stunting by ethnic groups. There is a general concern that the stunting affects the nutritional status of children under five [21].

[16] Afghanistan, Yemen, Guatemala, East Timor, Brunei, Madagascar, Malawi, Ethiopia, Rwanda, Nepal, Bhutan, India, Laos, the Republic of Guinea-Bissau, Niger, Democratic Republic of the Congo, North Korea, Zambia



Source: UNICEF, .Childinfo [23]

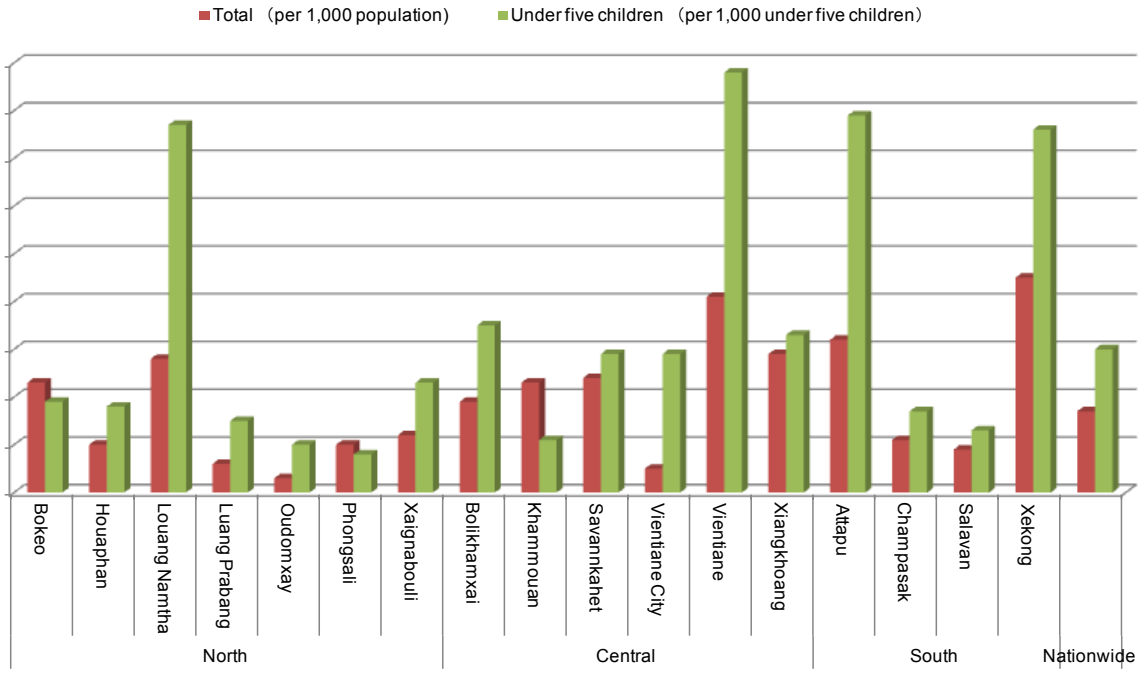
Figure 3-8 Comparison of Underweight in Children Under-five (2006)



Source: Millennium Development Goals Progress Report Lao PDR 2008 [21]

Figure 3-9 Comparison of Nutritional Status by Ethno-Linguistic Group (2007)

Looking at the malnutrition status by province (Figure 3-10), which was compiled at outpatient departments, the malnutrition rate is higher in Attapu Province and Sekong Province in the South close to Vietnam border, Vientiane City in the Central region and Louang Namtha Province in the North close to Myanmar border. However, the figure does not reflect malnutrition, which was not confirmed in health facilities, thus it safe to conclude that in the provinces where access to health facilities is easier, the number of confirmed cases of malnutrition is higher.



Source: National Health Statistics Report FY2009-2010 [24]

Figure 3-10 Malnutrition Rate Confirmed at Outpatient Department (Adult & Children aged under-five)

3.4.2 Nutritional Status of Women

14.5% of woman of childbearing age have a BMI less than 18.5[17]. About 37% of women of childbearing age suffer from mild or severe anaemia, about 15% of which is iron deficiency anaemia. 13% of women of reproductive age suffer from iodine deficiency.

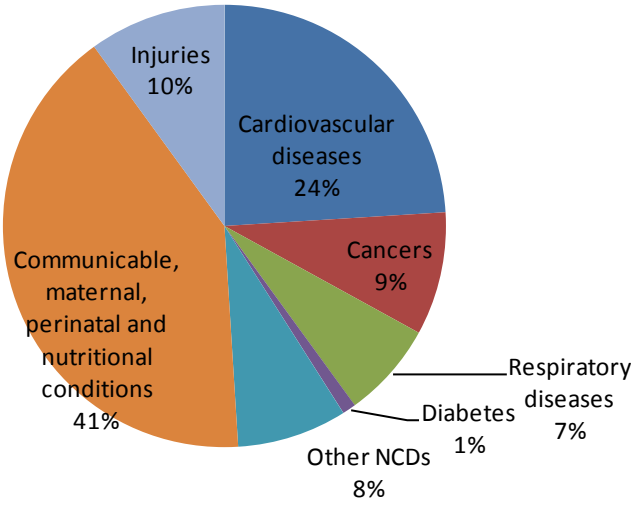
Underlying causes of this include food insecurity due to poverty, inappropriate nutritional knowledge of mothers and traditional values and practices regarding food restrictions for postpartum women [22].

3.5 Other issues

3.5.1 Status of Noncommunicable Diseases (NCDs)

As Figure 3-11 shows, noncommunicable diseases account for about 48% of all deaths [25]. Behavioural risk factors include smoking and physical inactivity. Risk factors of lifestyle-related diseases include hypertension, overweight and obesity. There are gender differences in these factors: the smoking rate of men is much higher than that of women (men 41.4%, women 2.5%) while more women are overweight (men 10.0%, women 16.4%) and obese (men 1.4%, women 3.7%) [25]. In Laos, injuries due to traffic accidents have increased. The main contributors for the increase of road traffic injuries are an increased amount of traffic and excessive speeding due to improved road conditions [26].

[17] BMI is the Body-mass Index that shows the percentage of body weight by height. Women are classified as underweight if they have a pre-pregnant BMI of 18.5 or below and it is pointed out that low pre-pregnancy BMI increases the risk of low birth weight infants.



Source: WPRO. Noncommunicable Diseases in the Western Pacific Region: A Profile.2012 [25]

Figure 3-11 The Proportion of Cause-specific Deaths (2008)

Chapter 4 Health Services

4.1 Maternal and Child Health

4.1.1 National Policies and Visions

In order to achieve MDG 4 and 5, improvement of maternal and child health is urgent and the Lao government has been very committed to this. As mentioned in 2.2.2, strengthening maternal and child health is prioritszed in the five-year Health Sector Development Plan (2011-2015). The Lao government has strengthened the measures by introducing a new policy on free delivery service and free of charge hospitalisation for children under five.

In addition, it is worth to mention that the Ministry of Health took the initiative to establish a MCH-EPI technical working group in 2007. Currently nutrition is added to the working group and it is called Maternal, Neonatal and Child Health and Nutrition - Technical Working Group (MNCHN-TWG). By this movement, maternal health and immunisation programme were merged and implementation of an integrated maternal and child health programme has been promoted.

Furthermore, the following main policies and strategies on maternal and child health measure can be found in Laos:

(1) National Reproductive Health Policy (2005)

In this policy, nine target areas are listed including family planning, maternal and child health, nutrition, control of genital tract related communicable diseases including HIV/AIDS and sexually transmitted diseases. Each area has its own objective and strategy [27]. The main strategies for maternal health and nutrition are shown in Table 4-1.

Table 4-1 National Reproductive Health Policy and Major Strategy on Maternal and Child Health and Nutrition

IEC/BCC/Advocacy	People's education on nutrition, breast feeding nutrition, immunization, child growth and genital function during EPI campaign and outreach activities
Health service	・Education for trained skilled birth attendants trained on obstetrical emergency ・Equipping facilities for early referral on the cases of obstetrical emergency cases under district level and upgrading staff capacity ・Pilot project of child birth center in remote villages of minorities ・Distribution of clinical practice guideline of safe motherhood to health centers and district hospitals ・Strengthening monitoring programme on infant nutrition and growth at facilities and community ・Mobilizing resources for strengthening immunisation

Source: Based on Laos Health Sector Analysis Paper 2009, JICA Laos Office [27]

(2) Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services (2009-2015)

This strategy cites the following three strategic objectives:

- Strengthening leadership, governance and management capacity for Programme implementation
- Strengthening quality and efficiency of health services provision
- Mobilizing and participation of individuals, family and community

In addition, the following six are set as the indicators which should be achieved by 2015 [20]:

- Maternal mortality ratio: 260 (per 100,000 live births) (MDG5)
- Under-five mortality rate:55 (per 1,000 live births) (MDG4)
- Infant mortality rate: 45 (per 1,000 live births) (MDG4)
- Neonatal mortality rate: 24 (per 1,000 live births)
- Proportion of underweight children under 5 years of age: One fourth of the level in 2005 (MDG1)
- Ratio of anaemia of childbearing-age women: 25% from 37%

(3) Skilled Birth Attendance Development Plan (2009-2012)

To increase the number of deliveries by skilled birth attendants along with promotion of institutional delivery is a key for improvement in maternal and child health. The capacity development of community midwives belonging to mainly health centres has been promoted under this plan. The plan also includes the target to develop 1,500 midwives by 2015 [28].

4.1.2 Maternal and Child Health Service Provision and Utilization

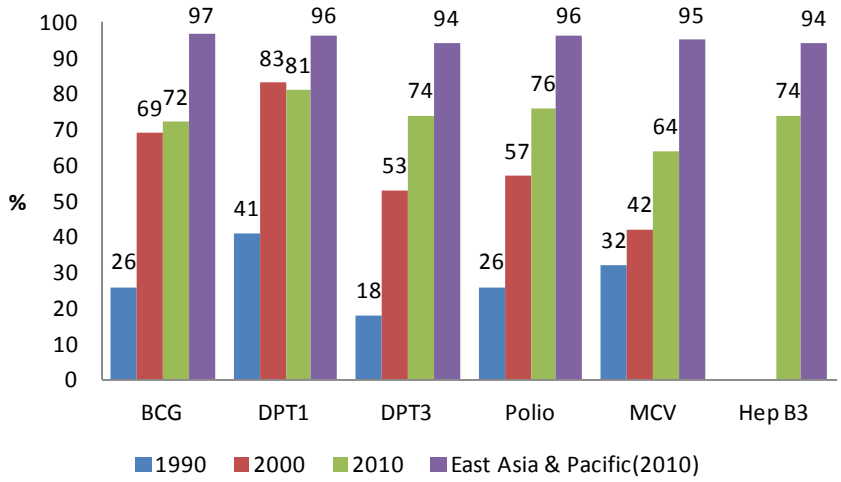
Table 4-2 shows the trend of indicators related to major maternal health services. Each indicator has shown an increase and the proportion of pregnant women who have received at least one antenatal care has already achieved MDG target (69%). However, WHO recommends a minimum of four antenatal visits, a target which is not yet reached. The proportion of births attended by skilled birth attendant, which is also one of MDGs and is effective in decreasing maternal mortality ratio, is still far below the target (50%) [24].

Table 4-2 Trend of Major Maternal Service Indicators

	2007-2008	2008-2009	2009-2010
Proportion of pregnant women who have received at least one antenatal care (%)	42	50	71
Proportion of births attended by skilled birth attendant (%)	24	35	37
Proportion of pregnant women receiving 2 or more tetanus vaccinations (%)	23	23	34

Source: National Health Statistics Report FY 2009-2010 [24]

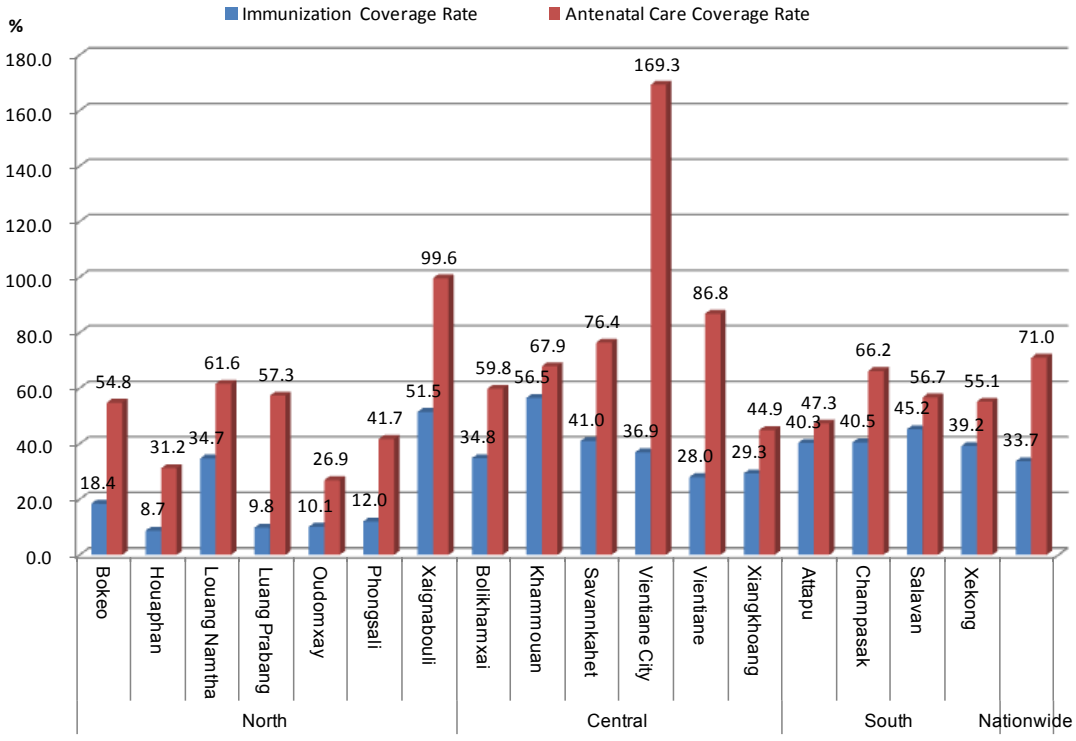
Regarding the immunization of children, though a major improvement has been seen in the past 20 years, the coverage of each immunization ranges from 60 to 80%. Also, there is a huge gap between the outcomes with the average for the East Asia-Pacific region (Figure 4-1). In regards to remote areas, although outreach services including immunization have been implemented, it is assumed that many services have not reached these places yet. Awareness activity on immunization is insufficient, and opportunities for immunization tend to be missed because many mothers do not utilize health services.



Source: UNICEF, Childinfo [23]

Figure 4-1 Immunization Coverage

Figure 4-2 indicates the immunization coverage and antenatal care coverage rates by province or city. There is a regional gap in service utilisation and both rates are lower in the North in general. The proportion of pregnant women who have received antenatal care is almost six times higher in Vientiane capital than that in Oudomxay province in the North which has the lowest coverage.



Source : National Health Statistics Report FY 2009-2010 [24]

Figure 4-2 Immunization Coverage and Antenatal Care Coverage Rates by Province/City

There is a huge gap between urban and rural areas in the proportion of delivery attended by skilled birth attendant; the rates are 9% in Oudomxay province in the North, 15% in Attapeu province along the Cambodian border, and 15% in Phongsaly province along the Chinese border against 92% at Vientiane [24]. The following causes for the regional gaps have been pointed out: data collection methods in Vientiane are

different from those in other parts of the country[18], hospitals in the capital function much better than the average, , improved infrastructure such as roads in certain areas and the difference in educational level of mothers, which results in a difference in health services utilisation [21].

In family planning, contraceptive prevalence rate is 40% and it is still far from the target of 55% by 2015 [20]. According to a survey done by UNFPA, the ratio of women who have used any contraceptive method is 39.6%. Modern contraceptive methods are prevalent these days with the most popular method being the pill (22.1%), injection (14.9%) and IUD (4.6%). However, the prevalence rate differs from region to region with high rates observed in urban and northern areas [29]. The Total Fertility Rate (TFR) in Laos has decreased from 6.2 in 1990 to 2.8 in 2010 but it still exceed the average for the East Asia-Pacific region (1.8, only developing countries) and that of surrounding countries[19] [9].

4.2 Communicable Disease Control

The control on HIV/AIDS, Tuberculosis and malaria in Laos has received resources from the Global Fund and as of 2012, the total fund approved for these three controls has reached USD119,142,966[20] (the details of the support are listed in 6.2.1). In order to ensure smooth implementation of the Global Fund Programmes, a Country Coordination Mechanism (CCM), which is composed of the members of ministerial officials, development partners and civil society, has been established. CCM coordinates the development and submission of national proposals for the Global Fund supported Programmes.

4.2.1 HIV/AIDS Control

(1) National Policies and Visions

The main policy in regards to HIV/AIDS control is the "National Strategic and Action Plan for HIV/AIDS and Sexually Transmitted Diseases 2011-2015" (NSAP). Setting the overall goals as "to maintain the current low level of HIV prevalence in the general population (15-49) below 1%" and "maintain HIV seroprevalence of high risk population at within 5%", the plan lists the following three as priority areas: 1) preventive service, 2) improvement of coverage rate and quality of treatment, care, and support services, and 3) improvement of management related to service provision. In addition, 94 districts out of 143 are set as prioritised areas based on indicators such as risk population, prevalence rate and population density. In the action plan, for each priority area practical activities are developed complete with target population, numerical target, etc. [30].

(2) Implementation System of HIV/AIDS Control

HIV/AIDS control has been implemented under National Committee for Control of AIDS (NCCA) which is chaired by the Minister of Ministry of Health and is composed of 14 representatives from each Ministry and from government agencies. The Center for HIV/AIDS/STI (CHAS) under the Department of Hygiene and Prevention (DHP) is the secretariat of NCCA and responsible for management and coordination of HIV/AIDS control. Furthermore, there are Provincial Committees for the Control of AIDS (PCCA) and District Committee for the Control of AIDS (DCCA) at provincial and district levels [30].

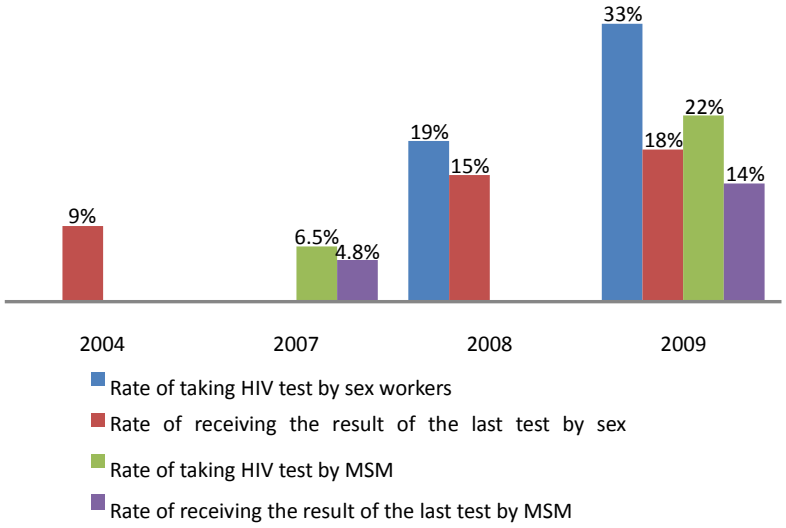
[18] When calculating the utilization rate of maternal services in Vientiane capital, the number of patients from other area is included in the numerator but the denominator includes only the number of pregnant women in Vientiane. Therefore, the ratio tends to be higher [24].

[19] 1.8 in Vietnam, 2.6 in Cambodia, 2.0 in Myanmar

[20] Among them, USD41,751,608 is allocated for HIV/AIDS control, USD23,278,833 for tuberculosis control, and USD54,112,525 for Malaria.

(3) Status and Issues of HIV/AIDS Control

The situation of service provision for HIV/AIDS control has improved in Laos to a great extent. For example, utilising Voluntary Counseling and Testing (VCT) among high risk group such as female sex workers and men who have sex with Men (MSM) has increased (Figure 4-3), while the percentage of MSM taking VCT increased more than three times in the past two years (2007-2009) and doubled within one year among female sex workers. The reasons behind these improvements include the increase in the number of testing sites, extension of rapid diagnosis kits, increase of outreach activities for high risk people and budget increase on VCT [16].



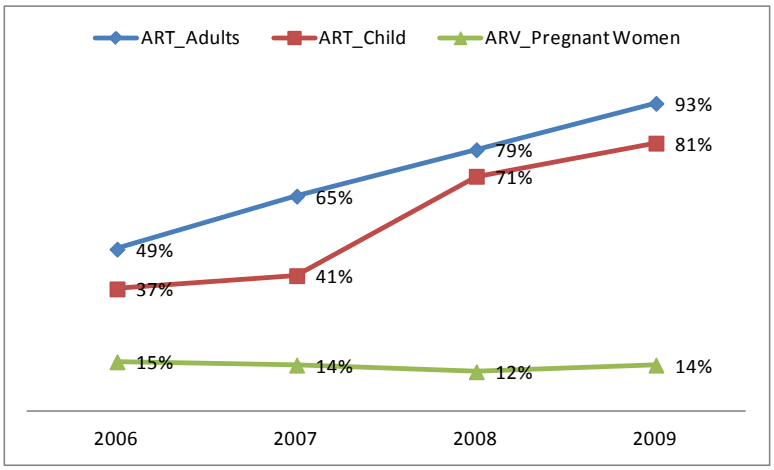
Source: Lao PDR UNGASS 2010 Country Progress Report [16]

Figure 4-3 Status of VCT Utilization

The ratio of HIV-infected patients taking anti-retroviral therapy (ART) has increased in both adults and children (referred in Figure 4-4) and 1,250 adult and 95 child patients took ART in 2009. Scale-up of treatment was one of priority area of the previous NSAP 2006-2010 and the good result in this area owes to the distribution of ARV and increase of ART sites. As of 2009, besides a total five ART sites (1 in the North, 2 in the Central region and 2 in the South), two satellite spots were established in the North. The extension of treatment is connected with an increase of awareness raising and outreach activities. Though in the past ART was mostly taken only in the terminal stage[21], patients who take ART at an earlier stage increased due to awareness programmes. As a result, the surviving rate is increasing. As of 2009, the 12-month survival rate after starting ART was 95% for adults and 100% for children.

On the other hand, the coverage of ART in pregnant women has not improved yet (Figure 4-4). This might be partly due to the limited integration of HIV treatment into the prenatal care programme. However, improvement of access to PMTCT service is expected as PMTCT has been incorporated into the Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services 2009-2015 and it is positioned as a priority area in NSAP 2011-2015.

[21] CD4<200



Source: Lao PDR UNGASS 2010 Country Progress Report [16]

Figure 4-4 Antiretroviral Therapy Coverage Rate

In general terms, trends in HIV/AIDS services in Laos have improved but the coverage rate is limited. NSAP 2011-2015 addresses gender sensitive measures, measures for high risk groups such as immigrants, MSM and youth, as well as strengthening monitoring, evaluation and surveillance (especially data collection and analysis of high risk groups). In order to implement measures in a sustainable way, the government is planning to put more emphasis on reducing dependency on donors like the Global Fund and mobilizing public-private partnerships [16].

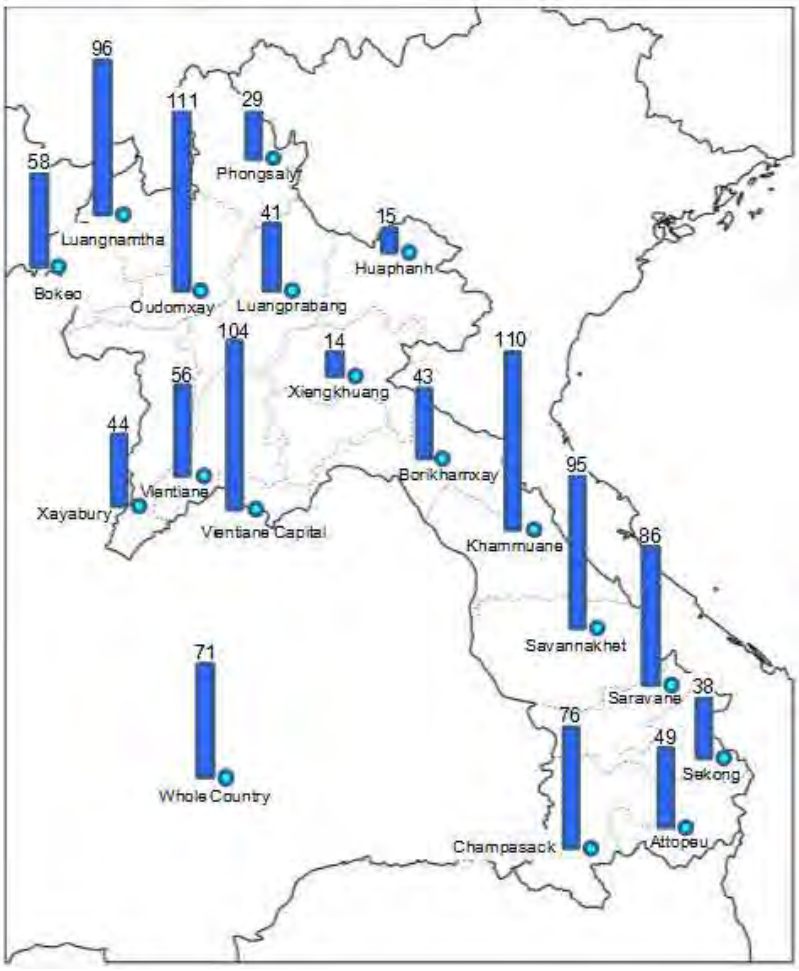
4.2.2 Tuberculosis Control

(1) National Policies and Visions and Implementation System

Tuberculosis control in Laos has been implementing Directly Observed Therapy Short-course (DOTS) with the support from the Global Fund. The control has been managed by the National Centre for Tuberculosis Control. The treatment of tuberculosis was introduced in central and provincial hospitals in 2003 and in 353 health centers in 2007 [27].

(2) Status and Issues of Tuberculosis Control

As mentioned in 3.3.2, under DOTS strategy, Laos has achieved the WHO's target rates of 70% and 85% for the case detection rate and the treatment success rate respectively. However, the gap among regions has been widening. Figure 4-5 shows the case detection rate according to province; the province with the lowest rate ranks 14%, which is much lower than the national average of 71%. On the other hand, the highest ranking three provinces in regards to case detection rate reached over 100%. The issue of data collection such as calculating denominators remains a problem [24].



Source: National Health Statistics Report FY2009-2010 [24]

Figure 4-5 Case Detection Rate by Region

In Laos, TB-HIV co-infection is a new agenda. In 2008 the National HIV/TB Coordination Committee was established under the Global Fund round 6 and the co-infection has been tackled. The Center for HIV/AIDS/STI (CHAS), which is the responsible agency for HIV/AIDS control in MOH, started coordination and collaboration with the National Centre for Tuberculosis Control, which is in charge of Tuberculosis control [16].

4.2.3 Malaria

(1) National Policies and Visions and Implementation System

Currently Laos has been implementing malaria control measures according to the National Strategy for Malaria Control and Pre-Elimination 2011-2015. In the strategy, the following objectives are listed and control measures have been implemented [31]:

- Decrease annual incidence of uncomplicated malaria to 0.8 cases per 1,000 population (3.14 cases in 2008)
- Decrease Annual Parasite Incidence (API) to 0.6 cases per 1,000 population (3.13 cases in 2008)
- Maintain the number of reported malaria deaths in hospital at below 15 per annum (11 cases in 2008)

The National Malaria Center under Department of Hygiene and Prevention, Ministry of Health is responsible for malaria control. Malaria Centers are located at the provincial level and supervise activities under district level.

(2) Status and Issues of Malaria Control

As mentioned in 3.3.3, Malaria is no longer the major cause of deaths in Laos, due to successful measures. As for mosquito nets, there was seen a significant increase in the percentage of using Insecticide-Treated Mosquito Net (ITN) from 17.7% in 2000 to 40.5% in 2006 [13].

Along with the increase of multidrug-resistant malaria, Artemisinin-based Combination Therapy (ACT) was introduced in Laos in 2004. The Ministry of Health concludes that INT and ACT are contributing factors for the decrease of malaria cases as well as severe malaria including death [31].

One third of the population still lives in high risk areas and ethnic minority groups, dwellers in tropical region and seasonal workers are among those categorised as high risk groups. Dwellers in tropical region are generally poor and from ethnic minorities which have their own languages, which is why the messages concerning health services hardly reach them. Accordingly, improving access to health services and strengthening prevention activities among ethnic minority groups is a key to malaria control [31]. In addition, the Lao government recognizes the necessity of early detection and provision of effective treatment, promotion of early diagnosis through community participation, regular supervision and training of health workers in order to ensure a more comprehensive primary health care approach [21].

4.3 Nutrition and Health

(1) National Policy and Visions

Measures to improve nutritional status in Laos have been implemented under the National Nutrition Policy (2008). The following ten specific objectives are to be achieved by 2020 under this policy [22]:

- Improve nutrient intake
- Prevent and decrease food and vector borne diseases
- Improve access to food
- Improve mother and child care and education related to nutrition and health
- Improve environmental health
- Improve nutrition programme with participatory management and monitoring and evaluation
- Put nutrition improvement as center in socio-economic development
- Priority investment in nutrition
- Strengthen the nutritional capacity at all levels and sectors in Lao government
- Promote action-oriented research and information system

In the same policy, the followings are cited as high priority targets:

- Rural area: Those groups living in remote highland areas with high levels of stunting
- Urban area: Those groups with low educational level
- In transition: Those groups who recently moved to lowland from highland and deprived from natural food resources
- Women of reproductive age and children

The National Nutrition Policy, National Nutrition Strategy and Plan of Action (2009) are formulated with support by a group[22] called REACH consisting of various United Nations agencies. REACH terminated its

[22]FAO, WHO, UNICEF and WFP jointly established partnership to support activities for improving maternal and child nutrition aiming to achieve MDG1.

cooperation in May 2011 but the Lao government joined an international network called SUN (Scaling Up Nutrition) in 2011 and has been addressing nutrition problems as a crucial agenda. The plan, in order to deal with the above mentioned priority issues in improving the nutritional status, also describes the role of related governmental ministries and agencies such as Ministry of Agriculture and Forestry (MAF) and Ministry of Education (MOE) besides the health sector.

(2) Current Situation and Issues of Low Nutrient Control

As for micronutrient supplementation, Vitamin A supplementation coverage rate for children (6-59 months/ twice a year) was 69%[23], but it is recognized that 45% of children under five are deficient in Vitamin A. Anaemia due to iron deficiency is seen in about 40% of children under five. Though the ratio of households that use iodized salt increased to 84% (2003-2009), 27% of school-aged children suffer from iodine deficiency [22]. Regarding breast feeding, only 26% of infants 0-5 months of age are exclusively breastfed [23]. Further, 5.9% of women receive iron and folate supplementation for more than 90 days during their pregnancy [20].

4.4 Noncommunicable Disease

In Laos, the incidence of noncommunicable diseases has increased due to lifestyle-related diseases and injuries due to traffic accidents. The government recognizes alcohol and smoking as risk factors that contribute to noncommunicable diseases and has been strengthening control measures. Specifically the government ratified the International Framework Convention on Tobacco Control in 2006, developed a series of regulations regarding health warnings on cigarette packs, regulated tobacco import, and arranged a non-smoking area in the National University. In addition, the National Anti-tobacco Law was approved by the National Assembly in 2009 [26].

In order to control non-communicable diseases, patient-specific clinical information is needed. However, detailed analysis and data on noncommunicable diseases are lacking in Laos [26]. For example, insufficient epidemiological data is available to identify risk factors for cardiovascular disease which is the leading cause of death. It is expected that in the future the ratio of noncommunicable disease will increase further. Assessment of risk factors for noncommunicable diseases at the national level is an urgent requirement. When implementing control measures, it is also crucial to strengthen awareness activities and to retain and train human resource in this sector.

According to a survey on risk factors of noncommunicable diseases conducted by WHO in 2007, currently the following three needs are identified in controlling noncommunicable diseases in Laos: 1) formulating of national policy and action plan for prevention and control, 2) strengthening intervention programme on the most relevant risk factors for noncommunicable diseases such as hypertension, smoking, alcohol intake and insufficient exercise and dietary cure, and 3) education for prevention [33].

[23] As of 2007 [20]

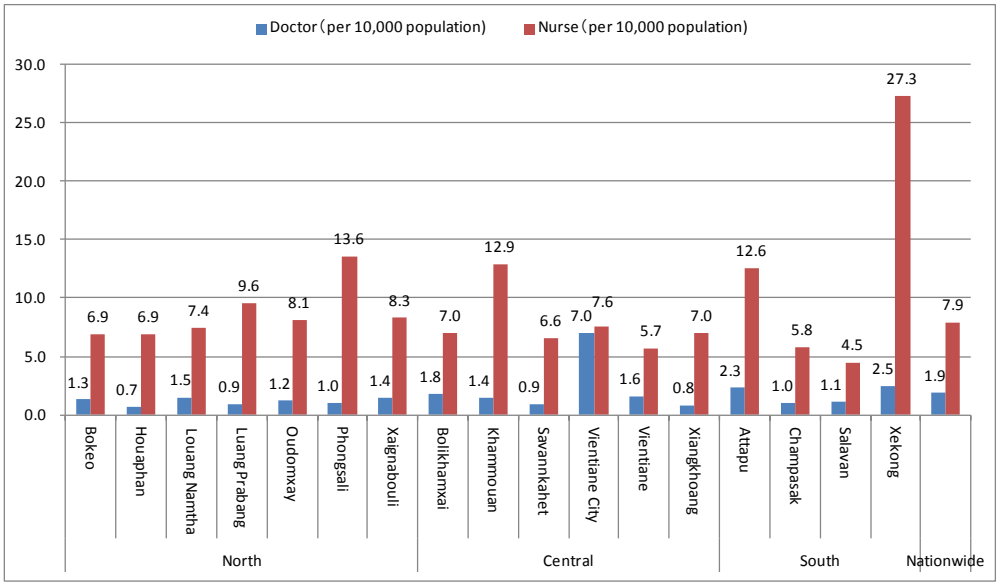
Chapter 5 Health System

5.1 Human Resources for Health (HRH)

5.1.1 Current Situation of HRH

According to the statistics of the World Bank, there has been no major increase in the number of doctors between 1995 (0.23 per 1,000 population) and 2005 (0.27 per 1,000 population) [9]. This shows that the lack of human resources for health is severe in Laos. According to the "Health Personnel Development Strategy by 2020", the number of human resources for health accounts 12,422 (2009), of whom 7,518 provide medical services. Moreover, only 3,385 persons received middle or higher level specialised education (such as doctors, nurses, midwives, etc.), consisting of 0.5 persons per 1,000 populations, which is lower than the WHO-recommended number of 2.5 persons per 1,000 populations [34].

Figure 5-1 indicates the allocation of doctors and nurses to provinces or city based on the 2009-2010 data. The highest concentration of nurses and doctors per 10,000 inhabitants was reported in Sekong Province and Vientiane city respectively. The number of nurses is relatively low in Vientiane Province, Savannakhet Province and Champasak Province although they have a regional hospital.



Source: National Health Statistics Report FY2009-2010 [24]

Figure 5-1 The Number of Doctors and Nurses by Province/City (per 10,000 population)

5.1.2 Development of HRH

Becoming a doctor requires six years of medical school education, while to become a dentist or a pharmacist requires five years of study. There is no National Certified Examination for students of medical institutes, and medical students are supposed to receive a post-graduate residency programme at a central hospital after graduation.

There is no system of nationally-accredited qualification for becoming a nurse or a midwife, but a framework for standard certification system and technical standards for evaluation are under preparation24. Nurses are

[24] Japan is currently supporting the development of the National Certified Examination for a nurse and a midwife through the Project for Sustainable Development of Human Resource for Health to Improve Maternal, Neonatal and Child Health Services (2012.2-2016.2)

classified as auxiliary nurse/midwife, mid-level nurse and high-level nurse according to their educational level. However, there is no training system for auxiliary nurse/midwife anymore and the upgrading of the current post of auxiliary nurse/midwife to mid-level nurse is being implemented. The position of mid-level nurse requires a Technical Diploma Nursing Science course (2 years and 6 months). For the position of high-level nurse, there is a Bridge Bachelor of Nursing Science course (2 years and 4 months) for those under the age of 45, who completed mid-level nurse/midwife course and have more than eight years of clinical experiences. Midwives are classified as community midwives, who are assigned to health centers and district hospitals, or registered midwives which targets mainly mid-level nurses or higher post. There are two courses for midwives, one an upgrading course for those who have a nursing qualification (registered midwife: 6-18 months, community midwife: 18 months) and another for those without prior specialized education (registered midwife: 3 years, community midwife: 2 years). Becoming a medical technologist requires 3 years of education [35] [36].

Table 5-1 shows the overview of training facilities and contents for HRH in Laos. The University of Health Sciences is the only institute for training medical students. Central Hospitals hold the post of teaching hospitals of the faculty of medicine at University of Health Sciences. In addition, in order to meet the needs of an increased number of medical students, MOH started to accept trainees at regional hospitals. Apart from doctor course trainees, there are 14 hospitals accepting clinical training of health schools within the country. Moreover, through the Medical Teaching Unit (MTU), established through the support of "Project for Medical Education and Research for the Setthathirath Hospital" of Japan, the quality of clinical education was strengthened. MOH evaluates its effectiveness and conducts training programmes for HRH by extending MTU to central hospitals and educational hospitals.

Table 5-1 Overview of Training Facilities and Training of Health Medical Workers, Training Facilities

Name of Facilities	Department, Training Contents	Place
University of Health Sciences	Medicine Department, Pharmacy Department, Dentistry Department, Nursing/Midwives Department, Medical Technology Department, Hygienic Management Department, Physiotherapy Department	Vientiane
Central Hospital (Mahosot, Settathirath, Mittaphab, MCH)	Clinical Training	Vientiane
Regional Hospitals		Luang Prabang, Savannakhet, Champasak, Oudomxay
National Institute of Public Health	Post-graduate training (Master degree in public health* and short-term course on health management for doctors in positions)	Vientiane
Research Institute of Tropical Medicine	Master degree for Tropical Medicine	Vientiane
College of Health Science	Nursing/midwives Department, Medical Technology Department, Hygienic Management Department, Physiotherapy Department, Medical Assistant Department	Luang Prabang, Savannakhet, Champasak
Public Health School	Nurses, Midwifes, Medical Assistants	Vientiane, Oudomxay Xieng Khouang, Khammouane, Salavan

*Since the master degree course in public health commenced by the support of Rockfeller Foundation at University of Health and Sciences in 2005, the master degree course at National Agency of Hygiene is not implemented.

Sources: Based on the related documents from MOH and key informant interviews

5.1.3 Prioritized Issues in Human Resources Development

The lack of human resources is more severe in rural areas. In order to address this issue, the Medicine Department, University of Health Sciences, established a 2-year home doctor programme (internship) to alumni in order to train home doctors in meeting the various needs of patients in rural areas.

From the perspectives of appropriate deployment of HRH, MOH aims to promote region-based medical education, which includes the training at provincial hospitals, by extending the experiences of central hospitals, which provide pre- and postgraduate education to provincial hospitals [37]. Under the concept of Complex Hospital-Institute- Project-University (CHIPU) [25], MOH also plans to provide technical support to district hospitals, to monitor the community health services in remote areas, to transfer knowledge/techniques to local staff, and to conducts research activities to give feedback the lessons learnt to rural areas.

It is essential to meet the balance of demand and supply in order to alleviate the uneven distribution of human resources. However, although the lack of human resources is obvious in rural areas, the occupation-wise data to show the rate of sufficiency at each level was not available in this survey. WHO also points out that comprehensive and updated data is missing to identify the number and distribution of HRH in developing a human resources plan in Laos [38]. The Department of Organization and Personnel, MOH, plans to develop a Health Personnel Information Management System (HPIMS) to manage the information on human resources development. Therefore, the formulation of a human resources development plan based on an accurate analysis of demand/supply balance using the system is expected in the future.

Furthermore, in order to further address the lack of HRH in rural areas, the introduction of incentives including remuneration is under discussion. A WHO led survey on effective package (child education, opportunity for promotion after working in remote areas, etc.) regarding incentives other than remuneration, is ongoing [39].

5.2 Health Financing

5.2.1 Overview

Table 5-2 shows the total health expenditure as percentage of Gross Domestic Product (GDP) and health expenditure per capita in Laos. Although the rate of public health expenditure among national expenditure was 5.9% in 2009[26], the Government of Laos decided to raise the budget distribution to MOH to 9% for the fiscal year 2011. This was to enable the 7th five-year Health Sector Development Plan to further prioritise MDGs targets and to response to a request from the Prime Minister's Office. However, the fund consists almost entirely of donor financial support and the rate of government investment scores lower than 9%. Also, there was no significant change in the total health expenditure as percentage of GDP over five years from 2005 to 2010, while health expenditure per capita more than doubled.

[25] CHIPU is the concept promoting the capacity development of HRH by coordination the stakeholders such as medical service providers (hospitals), medical educational research institutions (universities, research institutes, medical schools) and development partners.

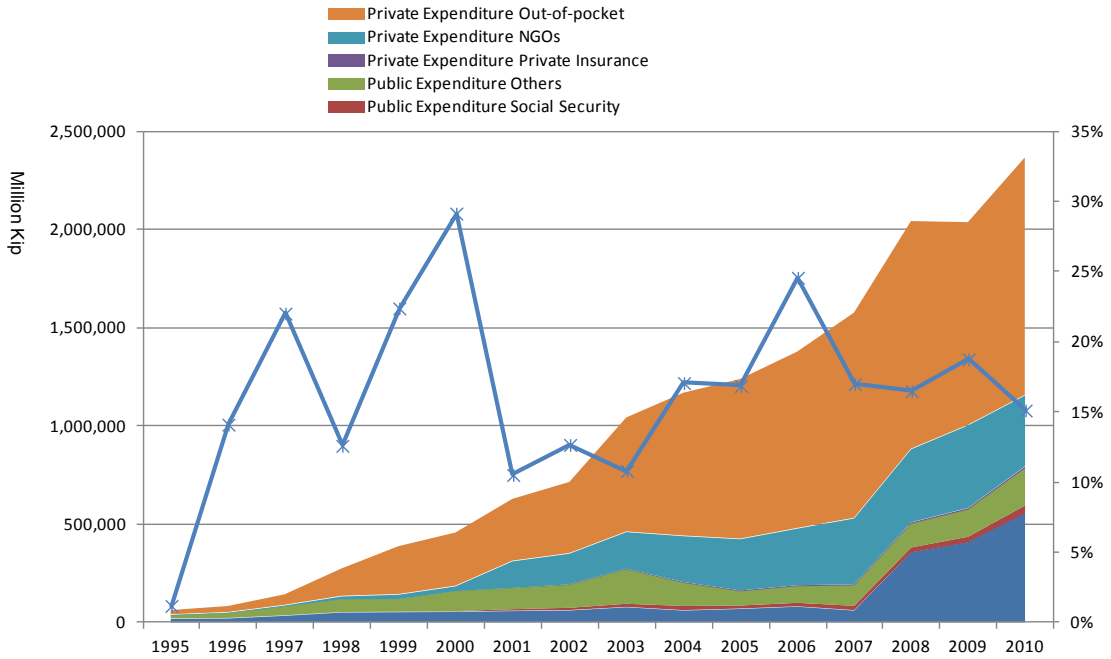
[26] In comparison with neighbouring countries, Laos scores the second lowest after Myanmar: Thailand 13.3%, Vietnam 7.8%, Cambodia 10.5%, Myanmar 1.0% (2010).

Table 5-2 Transition of Health Financing Indicators

	2000	2005	2010
Health expenditure, total (% of GDP)	3.2	4.3	4.5
Health expenditure per capita (US$)	10.2	20.8	46.2

Source: Health Nutrition and Population Statistics (HNP Stats) [9]

According to Figure 5-2, public health expenditure has been increasing along with the rise of total health expenditure since 2007. Out-of -pocket spending share was over 50% as of 2010, which hampers the achievement of universal health care coverage[27].



	1995		2000		2005		2010	
Public Expenditure	35,140	(59.7%)	159,191	(35.1%)	158,381	(12.8%)	786,997	(33.3%)
MOH	18,100		53,000		68,212		555,319	
Social Security	296	(0.5%)	1,960	(0.4%)	15,387	(1.2%)	39,536	(1.7%)
Others	16,744		104,230		74,782		192,142	
Private Expenditure	23,706	(40.3%)	294,682	(64.9%)	1,077,385	(87.2%)	1,577,311	(66.7%)
Private Insurance	0		0		4,640		8,765	
NGOs	2,615		24,136		260,272		359,122	
Out-of-pocket	21,091	(35.8%)	270,546	(59.6%)	812,473	(65.7%)	1,209,424	(51.2%)
Total Expenditure on Health	**58,847**		**453,873**		**1,235,767**		**2,364,308**	
External Resources*	689	(1.2%)	132,311	(29.2%)	208,373	(16.9%)	357,218	(15.1%)

Note: (%) in the table is the proportion in the total expenditure on health.
* Based on OECD/DAC data. The amount is included in the total expenditure on health.

Source: Global Health Expenditure Database, WHO [40]

Figure 5-2 Trend of Financial Resources for Health Expenditure

[27] According to WHO, universal care coverage is difficult to attain if out-of-pocket health expenditure is higher than 30% of total health expenditure.

5.2.2 Health Insurance and Out-of-Pocket Payment

(1) Health Insurance

In Laos, the following four health insurance schemes have currently been introduced in order to reduce the financial burden of patients and to secure their access to necessary health services (Please refer to Table 5-3 for a brief summary).

1) State Authority for Social Security (SASS): For civil servants
2) Social Security Organization (SSO): For employees in private sector
3) Community Based Health Insurance (CBHI): For self-employed and informal sector workers
4) Health Equity Fund (HEF): For individuals in households identified as living under the poverty line

Table 5-3 Summary of Health Insurance Systems

	1) SASS: State Authority for Social Security	2) SSO: Social Security Organization*1	3) CBHI: Community Based Health Insurance	4) HEF: Health Equity Fund
Responsible body	Ministry of Labour and Social Welfare (MOLSW)	MOLSW	MOH	MOH
Target population	Civil servants and their dependent families	Employees and their dependent families working at national companies and private companies with more than 10 employees	Self-employed and informal sector workers and their dependent families	Individuals in households identified as living under the poverty line
Affiliation	Compulsory	Compulsory	Voluntary	It is necessary to be identified as living under the poverty line by local authorities
Contribution	Rate of insurance*2 Government: 8.5% Civil servants: 8%	Rate of insurance*2 Employers: 5% Employees: 4.5%	Rate of insurance will be decided based on the affiliate's family size and living area	Donor and government
Benefit package	Outpatient treatment, inpatient cost*			Outpatient treatment, inpatient cost, medicaments, screening, transportation, meals, etc.
Estimated number of people in targets	399,672	386,988	About 3 millions	About 1.6 millions
Rate of coverage among target area population	79%	27.1%	4.7%	12.2%
Rate of coverage among total population	5.3%	1.7%	2..3%	2.9%

Note: *1: For 1) and 2), delivery allowance, employment security insurance, disorder allowance, disease allowance, elderly allowance, survivor benefit, and condolence allowance are included.
*2: Above rate will be deducted from monthly basic salary
Source: Based on Health Financing Strategy, Lao PDR 2011-2015 [41] and other related documents from MOH

MOH plans to achieve universal health insurance by 2020; however, the coverage ratio among the total population was only about 12%[28] (under four schemes in total) as of 2010. One of the biggest factors is the low enrollment rate of the informal sector. CBHI only covers 4.7% of target population (consisting of around half of total population) for informal sector (Table 5-3). Not only is the implementation area of the scheme limited[29], but also the benefits are limited comparing with others. As it is a voluntary insurance scheme, the low enrollment and the high rate of drop out (monthly average 4%) play a major role [41].

Regarding the other schemes, the operation management is not strong enough due to the following reasons: 1) The government support fulfills only around half of necessary amount (SASS), 2) Most of the fund is supported by donors, resulting in insecure budget allocation in the long run (HEF). Low enrollment is also caused by the low quality of health services. Although SSO is basically a compulsory scheme, the coverage is low as there is no penalty for not enrolling. Consequently, in order to have all citizens insured, an increase of the national budget as well as improvement of quality in health services is required, thus creating more benefits to affiliates.

Moreover, the Government of Laos expressed the intention to integrate the various schemes into one in the future under the Health Financing Strategy 2011-2015, and MOH, Ministry of Labour and Social Welfare, and relevant authorities currently coordinate to realize this. MOH targets to raise the insurance coverage rate to 50% by 2015 [41].

(2) Remission of Burden for the Poor

As a remission of the burden for the poor, abovementioned HEF is available. In order to adopt the scheme, a letter to prove the lack of payment ability produced by local authorities such as a village head is necessary. If approved, the transportation cost for visiting medical institutions and food cost will be provided in addition to the exemption of medical fees, acting as a large incentive for low income patients. HEF covered one third of the national areas by 2010 and it is reported in the Health Financing Strategy 2011-2015 that the use of health services of HEF affiliates increased fourfold (the annual average increased from 0.2 to 0.8 per outpatient) between 2008 and 2010. On the other hand, since information about the scheme is not widely available, few people understand its merits, especially among people with low education levels is low.

Regarding Maternal and Child Health, which is the prioritized issue of Laos, the new government policies for free deliveries and free inpatient cost for children aged under five are expected to contribute to improved access to health services for low income patients. Nong District in Savannakhet Province consists of many low income people, and it takes about five hours from the central area of the Province to reach the district by car during dry season. According to its provincial health department, during the past two years, after the introduction of free deliveries and free inpatient cost for children aged under five under a World Bank pilot project [42]. The policies are expected to be expanded gradually in the future, resulting in further improved access of patients to health services. However, since there is no prospect for long-term funding resources, the scheme it is a challenge in terms of sustainability.

[28] 17% as of July 2012
[29] The implementation areas are 25 districts out of 143 districts throughout the country as of 2012.

5.3 Health Management Information System

Health information in Laos used to be managed by each administration or programme, and it had not been integrated in the past. As the Health Management Information System (HMIS) was adopted in 2003 with the support of WHO, a nationwide standard format was developed and started to be utilized in 2004. Although the HMIS was introduced nationwide formally, the Health Metrics Network (HMN), which was implemented for the purpose of health information system assessment in Laos with the support of WHO in 2006, pointed out the followings areas which need improvement; 1) strengthening the human resources and their capacities to collect, manage, and operate the health information system, 2) developing vital registration system, 3) establishment of needs based indicators, 4) formulation of supporting mechanism to collect and manage the data at district and health center level, and 5) dissolving the overlap by integrating the health information system which were administration units-wise or programme-wise managed.

Currently, the activities are implemented for evidence-based information operation under the "Health Information System Strategic Plan (HISSP) 2009-2015". In regards to the HMIS, MOH formulated the "Health Statistics Report (2009-2010)" for the first time in 2011, and shared it with development partners. It is expected that health information will increasingly be utilized in planning or policy development in the future. In regards to health related surveys, the followings are regularly being conducted:

- Population and Housing Census: Once in 10 years
- Lao Expenditure and Consumption Survey (LECS): Once in 5 years
- Multi Indicator Cluster Survey (MICS) (1996, 2000, 2006), Lao Reproductive Health Survey (LRHS) (1995, 2000 and 2005): Once in a few years

*Lao Social Indicator Survey (LSIS) (2010/2011), which was the compiled version of MICS and LRHS, was also conducted. LSIS can collect impact indicators (such as maternal mortality ratio or under five mortality rate) which cannot be obtained by the HMIS.

Furthermore, Lao Info[30], which includes the data from national census, sampling survey and government report system, exists as a monitoring tool for the MDGs and the National Socio-Economic Development Plan (NSEDP).

In order to monitor the progress of the 7th Health Sector Development Plan, the Sector Common Work Plan/Monitoring Framework[31] (SCWMF) is adopted. It shows the project's progress in a table enabling the government and partners to efficiently and effectively co-monitor the progress of the Plan through the Sector-wide Coordination Mechanism (SWC).

5.4 Health Facilities/Medical Equipment/Drug Supply System

5.4.1 Health Facilities

Table 5-4 shows the number of health facilities nationwide under the direct control of MOH.

[30] In sequence to version 4.1 which was published in 2005, version 5.1 is available now.
[31] Japan is the largest donor for continuously supporting the formulation and revision of the tool through "Capacity Development for Sector-wide Coordination in Health Phase II"

Table 5-4 Number of Health Facilities in Laos (Under MOH)

1	Central Hospitals	7
2	Regional Hospitals	4
3	Provincial Hospitals	12
4	District Hospitals	130
5	Health Centers	828*

*The number of health centers varies depending on the sources
Source: Based on the MOH related documents and Results from the Interview Survey (as of February 2012)

Central hospitals are divided into general hospitals and specialized hospitals. General hospitals consist of Mahosot Hospital, Settathirath Hospital, Mittaphab Hospital, and MCH. The pediatrics section of MCH became independent, and the National Pediatric Hospital was newly established at a suburb of Vientiane in November 2011 (neonatal section stays the same). These four hospitals are registered as the educational hospitals for medical schools. There are three specialized hospitals, in ophthalmology, dermatology, and general rehabilitation.

Provincial Hospitals are general hospitals with basic treatment sections (internal medicine, surgery, paediatrics, and obstetrics/gynaecology), existing at each province. Four Provincial Hospitals (Luang Prabang, Oudomxay, Savannakhet, Champasak) are registered as Regional Hospitals, which function as core hospitals in the regions32. Oudomxay Regional Hospital functions as an education hospital, which offers doctor's internship training (for the onsite training of College of Health Science/Public Health Schools, 14 Provincial Hospitals are accepting trainees). There are sufficient Provincial Hospitals, but the quality of the medical services is not satisfactory. Some of the Provincial Hospitals among the Regional Hospitals feature broken X-ray machines, diagnosis equipment and CT scanner; . As a result patients have to be referred to hospitals in Thailand for diagnosis and return to the Regional ospitals for surgery afterwards [42].

District Hospitals are allocated in almost all districts. Some districts with provincial hospitals do not have district hospitals. District Hospitals provide treatment, while the District Health Department focuses on prevention in public health. However, some District Hospitals have space for preventive services, and focus both on prevention and treatment. Provincial Hospitals provide both prevention and treatment services. District Hospitals can be divided into A-type and B-type; relatively large hospitals which accept patients from other districts and conduct certain operations, can be categorised as A-type, while those with basic treatment facilities only can be categorised as B-type. Although there are sufficient district hospitals, the quality of the medical services is low. This is caused by the limited number of doctors and nurses above middle level, and unsatisfactory facilities and medical equipment. In mountainous areas, the physical conditions, such as bad access, further aggravates the situation. In order to improve physical access, a mobile team is formulated by districts to conduct outreach activities.

One Health Center covers roughly 6 to 8 villages, and its main activities include simple treatment, prevention, and health promotion. However, the quality of the services is worse than that of District Hospitals. Most Health Centers have no doctor and employ only a few middle/basic level nurses. Although the number of facilities has increased to a certain extent, their conditions tend to be sub standard, requiring the improvement of quality in facilities and services.

[32] According to the Health Care Department of MOH, there are several criteria to be registered as Regional Hospitals, and any of the hospitals have not been approved formally as Regional Hospitals yet (As of January 2012). Other source mentioned that three hospitals (Luang Prabang, Savannakhet, Champasak) out of four hospitals are registered as educational hospitals.

In addition to MOH controlled medical facilities, there are military hospitals under the control of the Ministry of Defence and police hospitals under the Ministry of Public Security. This survey could not ascertain their overall features including size and functions. Military hospitals are situated in every province and district military hospitals can be found in districts with many military related officials, while police hospitals are deployed only in relatively large provinces [42]. Most of these facilities' users are military or police related officials, but military hospitals also accept civilians[33]. It is assumed that these institutes play a supplementary role as a community medical service provider with MOH supported health facilities.

5.4.2 Medical Equipment

Although central hospitals are equipped with the necessary medical equipment, these are generally old. Lower level hospitals, on the other hand, face a severe lack of medical equipment. This is caused by the fact that most equipment is supported by donor assistance, and hospitals are unable to procure expensive equipment such as CT scanner or autoclave. The hospitals also lack human resources/budget for maintenance/management.

Only a few hospitals have allocated engineers who are specialized in medical equipment. If there are technical problems, these engineers mostly request private companies or the Medical Products Supply Center (MPSC) under MOH for repair. A Medical Equipment Repair Centre is under construction at Savannakhet Provincial Hospital with the support of Luxembourg Agency for Development Cooperation[34], and the engineers have been sent to Thailand for training. If the Centercommences its operation, the maintenance of medical equipment can be handled by the hospital itself; however, this case is rather exceptional [42]. In Laos, there is no private hospital[35], but there were 222 private clinics mainly in urban areas as of 2010 [44].

5.4.3 Provision of Drugs and Vaccines

(1) Overview

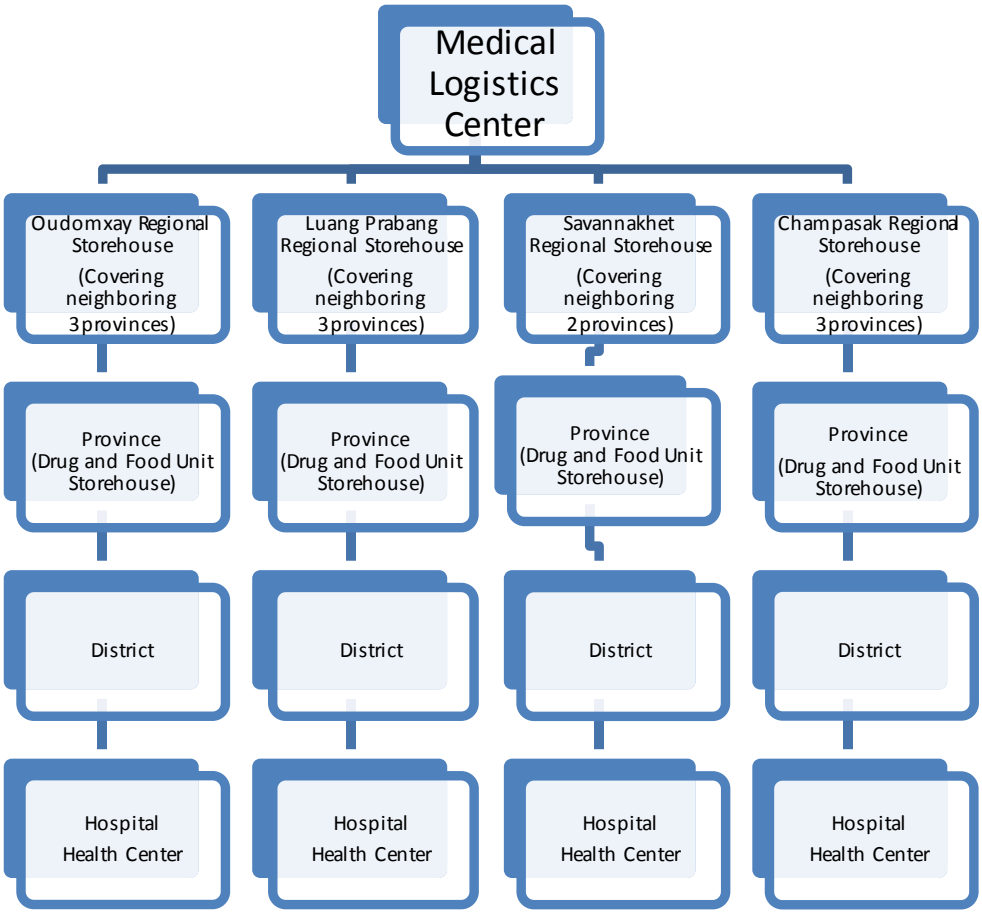
Medicines and vaccines up to now have different logistic systems, but MOH plans to integrate both logistic systems in the future [20]. The Medical Products Supply Center (MPSC) under Department of Food and Drug (FDD) and each center under Department of Hygiene and Prevention (DHP) exchanged an MOU on specific roles[36]. The relevant authorities headed by FDD and DHP, under the Food and Drugs Working Group, will discuss and share the process for integration in the future.

(2) Drug Supply System

There are two routes of drug supply: 1) essential drugs, and 2) medicines supported by donors (vitamin A, pills, iron tablet, ARV, anti-tuberculosis drugs, anti-malaria drugs, etc.). For essential drugs the process of decentralization has been progressing except for medicines provided by national programmes or donor funded projects. Each health facility conducts its own procurement and the MPSC provides back-up support. The flow of supply of donor supported drugs is solely managed by MPSC, as illustrated in Figure 5-3. These medicines are stored at the Medical Logistics Center under MOH, and provided to four regional

[33] According to basic data collection survey on health sector in Laos (January 2012), there is a military hospital 1 km away from the District Hospital, and it provides food, per diem, and free medicines to patients. Since the military hospital has more beds than the District Hospital and provides easy access to anyone, more people use the military hospital in Savannakhet Province.
[34] As of January 2012
[35] A new private clinic was established in the compound of Setthathirath Hospital, one of the central hospitals. It was established with the cooperation between Setthathirath Hospital and a private company.
[36] Regarding Integrated Logistics Management System, MPSC exchanged MOU with AIDS Center, Malaria Center and MCH. It intends to exchange it with TB Center in the future (as of February 2012).

storehouses every half year. The regional storehouses provide medicines to the storehouses of drugs and food units in provinces quarterly. Districts and Health Centers distribute the medicines monthly to provinces.



Note: Inside of ( ) shows the frequency of procurement

Source: Basic data collection survey on health sector in Laos [42]

Figure 5-3 Medicine Procurement (For Donor Supported Medicines)

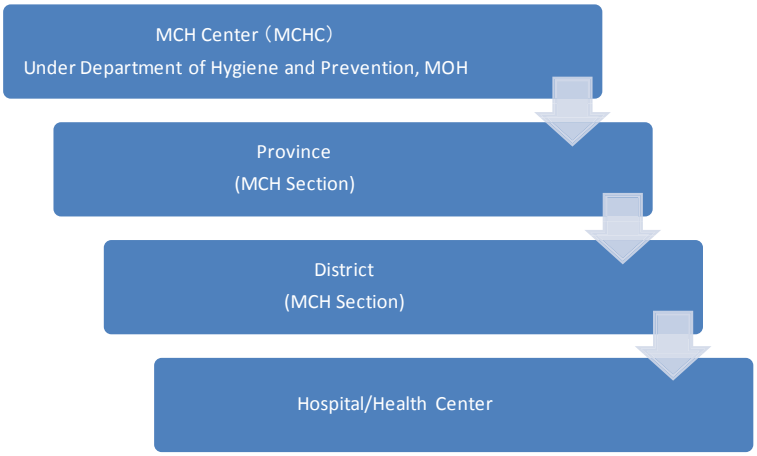
For the MCH-related medicines, a pilot activity aiming more effective logistics (in three districts of Champasak Region storehouse) is ongoing under the support of UNFPA. Moreover, with the support of the Global Fund, the Logistics Management Information System (LMIS) will be introduced at Medical Logistics Center to promote effective logistics for TB, Malaria, HIV/AIDS related medicines[37]. If this system proves to be effectiveness, the LMIS can be introduced for other medicines, creating a single national standard for logistics [42].

(3) Vaccine Supply System

In Laos, regular vaccines for the Expanded Programme on Immunization (EPI) are mainly supported by UNICEF. Figure 5-4 explains the flow of the vaccine supply system. Basically, the vaccines are provided from central level to provinces and from provinces to districts every two months, while districts supply hospitals/health centers on a monthly basis. Although the procurement process is supposed to follow the flow as shown in Figure 5-4, the timing of invoice/supply varies among district hospitals or the number of procurements varies according to the type of vaccines [42].

[37] The draft of the guideline is under preparation as of February, 2012.

The stock of vaccines is managed through a monthly report from each facility including a vaccine invoice column. Furthermore, central level and some provinces use a stock management database.



Note: Inside of ( ) shows the frequency of procurement
Source: Basic data collection survey on health sector in Laos [42]

Figure 5-4 Flow of Vaccine Supply

(4) Approval of Medicine Production

There are seven pharmaceutical factories in Laos (including small scale factories producing traditional medicines), of which two are run by the government. The biggest pharmaceutical factory No.3 (governmental) complies with international standards[38] such as the ASEAN Good Manufacturing Practice (GMP) for production. For the import of medicines, the approval of FDD is required. While ASEAN Free Trade Area (AFTA) is scheduled to be completed by 2015, pharmaceutical factory No.2 and No.3 intend to gain the GMP before 2015 for export purposes (pharmaceutical factory No.3 received the GMP on tablets, but it expired in 2004). One of the obstacles the factories are facing is that there is no appropriate instructor[39] regarding GMP acquisition available in Laos [42].

5.5 Governance and Management

5.5.1 Health Administration

Regarding the structure of the health administration in Laos, the administration of Central government until recently consisted of Health Minister and Deputy Ministers (usually 2-3 members) who supported the Minister, Cabinet and 6 Departments in the past. Department of Health Care, MOH was in charge of planning, implementing, and supervising health facilities, while Department of Organization and Personnel was responsible for planning, implementing of human resource development and supervising medical institutes [27]. However, the health administration has been restructured into nine Departments in June 2012. The organizational restructuring is underway for Provinces/Districts, and the details need to be clarified.

Each department was independent and donor agency provided assistance to specific department separately in the past. There was no coordination among the departments. Since JICA's technical cooperation project "Capacity Development for Sector-wide Coordination in Health" was started in 2006, building a coordination mechanism among the health sector projects has been promoted, both within MOH and among donors. At present, "Capacity Development for Sector-wide Coordination in Health Phase II" is ongoing.

[38] Apart from Japanese Pharmacopeia, United States Pharmacopeia (USP), British Pharmacopoeia, etc. are existing.
[39] The technical support of WHO is limited.

Three technical working groups were established in Phase 1 (planning and financing technical working group, human resource technical working group, and maternal, neonatal and child health technical working group[40]), and another three were newly formulated by the legislature in November 2011 (food and drug technical working group, health care technical working group, hygiene prevention and health promotion technical working group). At present a total of six working groups are in function.

5.5.2 Monitoring Structure

Regarding the 6 prioritized programmes under the 7th Five-year Health Sector Development Plan, "Sector-wide Indicators" which monitor each programme are being formulated at each technical working group currently. For MCH, the national budget was allocated without donor's support, and supportive supervision has been conducted at 1-3 districts in all provinces twice a year. Central and provincial level officials together visit districts/health centers which need specific support.

5.5.3 Referral System

Although a network has been formulated among health centers to district hospitals, provincial hospitals and central hospitals in Laos, the referral system including transfer system to connect each facility is hardly functioning. There is no guideline or manual specifying the role of each health facility regarding referral. Therefore, while prevalence of diseases, facility/equipment, function, or human resources differ depending on each area, each health facility independently judges the case and refers to higher facilities.

Under such circumstances, at each level bypass is common, as patients themselves decide to visit higher facilities requesting better services. District hospitals fail to gain trust from the people as entry points. Furthermore, many patients are sent to Thailand, especially from the remote areas around Vientiane where the central hospitals are located, as this part of Laos is long and narrow, with an extended border with Thailand. Considering the distance to hospitals, the cost for the transfer and the quality of health services, it makes sense to send emergency cases/severe patients to neighbouring countries[41].

Only the central hospitals in Vientiane and some provincial hospitals are equipped with ambulances as a means of patient transfer. The health department in Vientiane City also has ambulances. However, the ambulances tend not to have the necessary equipment nor attending doctor or nurse, which hampers their effectiveness. Apart from ambulances, public transportation such as bus and taxi can function as a means of transfer, as well as the community arrangements. In reality however, patients themselves secure a means of transfer most of the times. In Laos, with its mutual support culture, the support from relatives or neighbours can be obtained easily, but this extends until neighbouring district hospitals at best. Among remote area patients the physical and economic burden of visiting a provincial hospital is large, and becomes even larger when visiting a central hospital.

[40] Nutrition is added at the moment, and the name is changed to Maternal, Neonatal and Child Health and Nutrition Technical Working Group (MNCHN-TWG).

[41] For example, it takes about 6-7 hours from Savannakhet Provincial Hospital in the south to Vientiane, and only about 20 minutes to Thailand.

Chapter 6 Development Assistance and Partnership

6.1 Framework of Donor Coordination

Responding to the "Paris Declaration on Aid Effectiveness" in 2005, the "Vientiane Declaration" was signed among 22 development partners (currently 25) in 2006 in Laos. The Government of Laos and the development partners formulated and approved the "Country Action Plan" of the "Vientiane Declaration" in 2007. Furthermore, the Sector Working Group (SWG) to implement and to monitor the progress of the "Country Action Plan" was established in eight sectors including health. The project coordination mechanism in the health sector is handled by three layers: SWG (policy level), SWG (operational level), and Technical Working Group (TWG), and they also share information and discuss issues with donors. The secretariat of the Country Coordinating Mechanism (CCM) of the Global Fund joins the abovementioned project coordination mechanism, harmonizing other coordinating mechanisms.

As mentioned in 5.5.1, the project coordination mechanism was formulated and operationally strengthened through the implementation of a JICA assisted technical cooperation project "Capacity Development for Sector-wide Coordination in Health (and Phase II)". It resulted in an agreement between MOH and development partners to establish the Five-year Health Sector Development Plan as the sole policy framework for health. The roles and the brief of SWG (policy level), SWG (operational level), and TWG are described at Table 6-1. Japan has been participating with them as the leading agency since their establishment. Each working group is established along with each Department of MOH in compliance with the current structure.

Table 6-1 Project Coordination Mechanism in Health Sector

Meeting	Chair	Frequency	Contents
Sector Working Group : SWG (Policy Level)	Chair: Health Minister Co-chair: Japan Ambassador/WHO Representative	Twice a year	・Progress reporting on prioritized issues of the Five-year Health Sector Development Plan ・Discussions and final confirmation on the next Five-year Health Sector Development Plan
SWG (Operational Level)	Deputy Health Minister	Three times a year	・Progress review on the Five-year Health Sector Development Plan ・Reporting on the implementation of each TWG ・Emerging important issues (cf. discussions on free MCH services, finance costing, processes of GFATM R11, etc.)
Technical Working Group : TWG		Once in two months	6 TWGs are established. JICA supports the overall operation of the TWGs. 1) Planning and financing TWG 2) Human resource TWG 3) MNCH TWG(currently, the nutrition was added and the name has been changed to MNCHN TWG) 4) Food and drug TWG 5) Health care TWG 6) Hygiene prevention and health promotion TWG

Source: Based on the documents from MOH and the Country Information Sheet in Health Sector [43]

The coordination mechanism in health sector has been functioning effectively. This coordination mechanism works as a platform among the Government of Laos, each country's embassy, and the development partners. The various meetings (such as policy level SWG, operational level SWG, and TWG) are convened regularly.

Each development partner supports the implementation of policy and strategies,efficiently and effectively, including the JICA supported project, "Capacity Development for Sector-wide Coordination in Health Phase II" [43].

6.2 Activities of Major Development Partners

6.2.1 Current Situation

Development partners in Laos support the government in the six prioritized issues of the 7th Five-year Health Sector Development Plan through the abovementioned project coordination mechanisms. As a result, overlapping/uneven distribution of issues and target areas among the development partners is prevented, and a platform for efficient and effective assistance has been created. In MCH the relevant agencies address priority issues by regions in accordance with the Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services.

The current situation of assistance by major development partners is illustrated in Table 6-2.

Table 6-2 Main Assistant Areas of Major Development Partners

	Prioritized Areas	MCH (including nutrition)	HIV/AIDS	TB	Malaria	Health System
WHO	Savannakhet Province, Phongsaly Province, Louang Namtha Province, Oudomxay Province*	○	○	○	○	○
UNFPA		○	○			○
UNICEF		○	○			○
WFP		○				
WB	5 Provinces in south (Attapu Province, Champasak Province, Salavan Province, Savannakhet Province, Sekong Province)	○				○
ADB						○
Lux-Development		○				○
EU						○
KOICA		○				○

*4 agencies jointly implement MCH Programme

Source: WHO Country Cooperation Strategy for the Lao People's Democratic Republic 2012-2015 [44]
UNICEF Country Programme, 2012-2015 [45]
WB Country Partnership Strategy for Lao Peoples Democratic Republic for the Period FY12-FY16 [32]
ADB Country Partnership Strategy Lao People's Democratic Republic 2012-2016 [46]

Table 6-3 shows the list of support from the Global Fund. The Global Fund has been contributing to the improvements in HIV/AIDS, TB, malaria and health system. However, Round 11 for malaria, which required additional fund application, was suspended, and a lack of purchasing fund for Anti-retroviral Drug (ARV) was revealed for HIV/AIDS. Thus, in order to secure long term budgeting, government contribution for these communicable diseases is essential.

Table 6-3 Programme Assistance to HIV/AIDS, Tuberculosis, and Malaria by the Global Fund

Type of Assistance	Round	Title	Agreed Assistance Amount (USD)	Responsible Agencies To Accept the Fund
HIV/AIDS	R1	Prevention and Control of HIV/AIDS/STI in the Lao P.D.R	3,375,607	MOH
	R4	Scaling up the fight against HIV/AIDS/STI, TB an Malaria in the Lao P.D.R. (HIV/AIDS Component)	7,165,191	MOH
	R6	Scaling up HIV and AIDS Prevention, Care and Treatment in Lao PDR	3,243,046	MOH
	R8	Scaling up HIV and AIDS Prevention, Care and Treatment in Lao PDR	7,213,313	MOH
	Single Stream of Funding Grant-SSF (ongoing)	Scaling up HIV and AIDS Prevention, Care and Treatment and Strengthening Management, Increasing Demand and Ensuring Quality of HIV/AIDS/STI Interventions in Lao PDR	12,565,445	MOH
TB	R2	Reducing the Tuberculosis Burden in the Lao P.D.R.	3,439,395	MOH
	R4	Scaling up the fight against HIV/AIDS/STI, TB an Malaria in the Lao P.D.R. (TB Component)	3,617,781	MOH
	R7 (ongoing)	Reducing the TB burden in Lao PDR October 2008 – 2013	7,817,869	MOH
	SSF (ongoing)	Reducing the TB burden in Lao PDR	6,534,029	MOH
Malaria	R1	Prevention and Control of Malaria in the Lao P.D.R	12,709,087	MOH
	R4	Scaling up the fight against HIV/AIDS/STI, TB an Malaria in the Lao P.D.R. (Malaria Component)	14,502,222	MOH
	R6	Ensuring the quality of anti-malarial and other Drugs in the Lao PDR	3,633,039	MOH
	R7 (ongoing)	Sustaining Malaria Control in Lao PDR, focusing on Malaria vulnerable population through multisectorial approach	15,973,540	MOH

Source: GFATM, Country Grant Portfolio, 2012 [47]

6.2.2 Assistance by Major Development Partners

(1) World Health Organization (WHO)

At the health SWG (policy level), under the chair of MOH, WHO, co-chaired by Japan, takes the leading role for project coordination. The support of WHO covers the health policy as a whole with the following four pillars: 1) the assistance on policy level to achieve MDGs, 2) the countermeasures for communicable diseases prevention, 3) strengthening coordination functions, and 4) strengthening the countermeasures for noncommunicable diseases. For policy level assistance, WHO provides technical cooperation aligning with the Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services [44].

(2) United Nations Population Fund (UNFPA)

UNFPA supports three areas: 1) reproductive health, 2) population, and 3) gender. The main priorities under reproductive health are the improvement of service coverage (population and family planning, HIV education, etc.), the support for the Strategy and Planning Framework for the Integrated Package of Maternal

Neonatal and Child Health Services, and the improved access to information services for urban youth. UNFPA also assists in the expansion of Skilled Birth Attendant (SBA) and the improvement of the logistic system for procuring contraceptive pills and others [42] [43].

(3) United Nations Children's Fund (UNICEF)

UNICEF currently supports the Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services (especially for children aged under five), nutrition, HIV/AIDS services, and hygiene. The new country programme strengthens the regional focus in order to give concrete impact at local level. For instance, donor assistance is almost non-existence in the poor Louang Namtha Province and Phongsaly Province in the northern areas. UNICEF categorizes these two provinces as "One Learning Zone" and assigned permanent staff in order to provide intensive UNICEF sector support of UNICEF [42].

(4) World Bank (WB)

WB is currently implementing a health services improvement project, targeting human resources development through financial assistance mainly in five provinces in the southern areas. Also, in alignment with the country's policies on free delivery and free inpatient cost for children under five, the services are provided at the target areas through poverty reduction support operation and support is given in promoting a health equity fund for low income families [32].

(5) Asian Development Bank (ADB)

Although the health sector is not included in the prioritized areas in the Country Partnership Strategy (2012-2016) [42], ADB assists in the capacity development for financing management and countermeasures for communicable diseases [46].

(6) Luxembourg Agency for Development Cooperation (Lux-Development)

Lux-Development supports mainly in the following four areas: 1) health system improvement in three provinces in central areas, 2) health financing support (for low income families), 3) immunisation related activities (coordinating with UNICEF), and 4) support for the revision of "Medical Equipment Management Plan: 2003". In regards to medical equipment management, a medical equipment repair centre is under construction (as of January 2012), and Lux-Development assists the training of engineers in Thailand [42].

(7) Korea

Korea International Cooperation Agency (KOICA) has constructed a children's hospital and sends volunteers. KOICA aims to strengthen the support for the health sector in the future and has started to participate actively in each TWGs. Korea Foundation for International Healthcare (KOFIH),in coordination with WHO, assists the Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services in two provinces in northern areas.

6.3 Outline of Japanese Cooperation

According to Japan's Country Assistant Strategy for Laos (April, 2012), the following four areas are priorities; 1) socio-economic infrastructure development, 2) agriculture development and forest preservation, 3) development of educational environment and human resources, and 4) improvement of health services. Japan expresses the commitment in assisting MCH, human resources development, and health system

[42] Prioritised areas are; 1) education, 2) agriculture and natural resources, 3) water supply, rural infrastructure development and services, and 4) energy.

strengthening, including developing health facilities for improved access to health services, in order to achieve MDGs [48].

Table 6-4 shows the area of current cooperation of Japan for health sector in Laos. Japan holds the leading role for project coordination within MOH and among development partners at the central level by assisting the practical implementation of policies and operational plans/strategies (Capacity Development for Sector-wide Coordination in Health Phase II). In order to implement the strategies thoroughly, it also supports Health Departments at provincial and district levels, especially for MCH (Project for Strengthening Integrated Maternal, Neonatal and Child Health Services). While Japanese assistance promotes the effective implementation of MCH related projects in Laos from both central and rural levels, it also addresses the issue on human resources development in health through capacity building for human resources for MCH including nurses (Project for Sustainable Development of Human Resource for Health to Improve Maternal, Neonatal and Child Health Services) Moreover, it convenes joint meetings among experts in Laos, as well as health sector information sharing meetings which are held regularly with the participation of experts, volunteers, NGO of grassroots technical cooperation, and volunteer coordinators, contributing to the concrete cooperation as a programme.

Table 6-4 Recent Assistance in Health Sector by Japan

Scheme	Name of Project	Length of Cooperation
Grant Aid	Project for the Improvement of District Hospitals	2005-2007
	Expanded Programme on Immunization (through UNICEF)	2007
Multi	Developing Model Healthy Villages in Northern Lao PDR	(Note) Supported by Japan Fund for Poverty Reduction (JFPR), ADB
Grassroots Grant	Establishment of Health Post, etc.	2 cases in FY2010
Technical Cooperation (Ongoing projects are all covered under "MCH improvement Programme")	Project for Strengthening for Health Services for Children	2002-2007
	Project for Strengthening the Medical Logistics	2005-2008
	Project for Human Resources Development of Nursing / Midwifery	2005-2010
	Capacity Development for Sector-wide Coordination in Health	2006-2010
	Project for Medical Education and Research for the Setthathirath Hospital	2007-2010
	Project for Upgrading Diploma Nurses	2008-2012
	Project for Strengthening Integrated Maternal, Neonatal and Child Health Services	2010-2015
	Capacity Development for Sector-wide Coordination in Health Phase II	2010-2015
	Project for Sustainable Development of Human Resource for Health to Improve Maternal, Neonatal and Child Health Services	2012-2016
Preparatory Survey	Project for Strengthening Health Service Network in Southern Provinces	2012
JOCV	JOCV (Nurses/midwives/Medical laboratory technician) Senior Volunteer (Nurses)	

Source: Based on MOFA. ODA Country Databook [5] and Country Assistant Strategy [48]

Chapter 7 Priority Health Issues and Recommendations

7.1 Priority Health Issues

Figure 7-1 shows the current situation and challenges in the health sector in Laos.

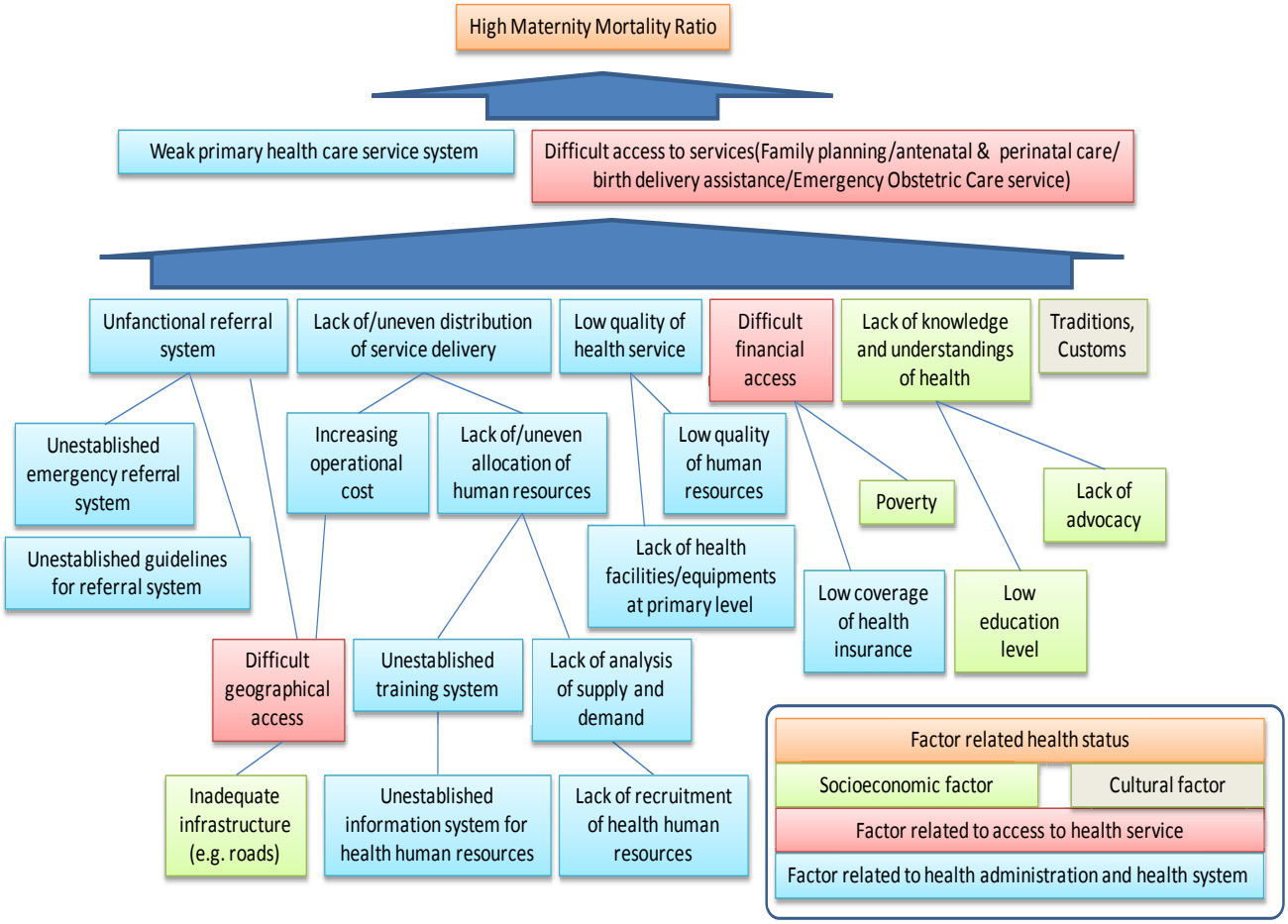


Figure 7-1 Issues and Background in the Health Sector in Laos

7.1.1 Health Problems in Laos

In Laos, through the promotion of health programmes such as malaria, tuberculosis, and EPI, the health indicators of infectious diseases, under five mortality rate, infant mortality rate have been steadily improving. However, the maternal mortality ratio is the highest in Southeast Asia, and the achievement of the target of the Millennium Development Goals is believed to be difficult. Addressing maternal mortality is the biggest challenge in the health sector in Laos.

7.1.2 Background of Issues

The two following issues cause the delay in improvement of maternal mortality ratio: 1) limitation of access to maternal health services (family planning, antenatal care, birth delivery assistance, access to emergency obstetric care services), 2) vulnerability of primary health care service system.

(1) Difficult access to health services

1) Economic factor: heavy economic burden in using health services (e.g. low rate of insurance coverage, transportation cost to health facilities).

2) Geographic factor: inadequate roads and infrastructure caused increase operational cost in the areas that is difficult to access health service geographically. As a result, it is considered to cause the shortage of health service provision and uneven distribution in urban areas. And the lack or unevenness of service delivery posts are also caused by the lack or uneven allocation of health human resource due to lack of analysis of demanding balance based on the health human resource information.

3) Socio-cultural factor: low level of women's education and lack of educational activities led to lack of understanding woman's health and service. In addition, traditions and customs including restricted diet for postpartum women, cultural taboos and customs adversely affect mothers' health.

(2) Vulnerability in primary health care (PHC) delivery systems

The number of health centers, which are the main promoters of PHC services, is increasing, however its service delivery system is vulnerable. Maternal health services are not provided effectively and efficiently because of the following reasons:

1) Lack of health human resources・uneven allocation to urban areas: Normally only low-level auxiliary nurse are stationed at health centers. In addition, there is a shortage of skilled human resources for nurse and midwife due to underdeveloped foundation (unified curriculum, national examinations etc)

2) Lack of/wearing out of facilities and equipment

3) Malfunctioning referral system: There is no guideline or manual specifying the role of each health facility regarding referral. District hospitals tend to be disregarded as entry points by patients, resulting in bypass, with patients using higher facilities as entry point. In addition, it makes sense to send patients to neighbouring countries considering the distance to hospitals and the quality of health services. Further, securing the means for patient transfer is a challenge as well.

7.1.3 Government of Laos and Development Partners' Initiatives to Challenges

The government of Laos listed improving maternal and child health and controlling infectious diseases in "hygiene and prevention" among the six highest priorities of the 7th five-year Health Sector Development Plan (2011-2015). The development partners, following the priorities of the Lao government, have been supporting policy and strategy development, financial support, human resources development, health facilities and equipment through the programme coordination mechanism.

To achieve the MDG targets for maternal and child health, the maternal and child health programme and immunization programmes were integrated under the maternal and child health working group. This group was established under a programme coordination mechanism in 2007 and the maternal and child health programme packaging was promoted. By adding nutrition measures to above-mentioned working group, the implementation of a more comprehensive approach to maternal and child health measure has been made possible.

The trend for packaging of maternal and child health services can also be seen in the Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services (2009-2012),

developed by the Ministry of Health and development partners through the Maternal, Neonatal and Child Health and Nutrition (MNCHN) technical working group. This strategy stresses the standardization of effective service packages for reducing maternal and child mortality based on the concept of continuous care in a series of interventions of before pregnancy, during pregnancy, childbirth, postpartum, newborn and children. Additionally, the MNCHN technical working group took the initiative to develop the Skilled Birth Attendance Development Plan (2009-2012), a training plan for skilled birth attendants, who are the key staff in improving maternal and child health.

In regards to the regional differences in access to health services, all relevant organizations participating in the MNCHN technical working group have strengthened measures for universal access through sharing roles by regions and issues. In addition, in order to improve economic access to health service, the government of Laos launched a policy of free delivery and free inpatient cost for children under five and allocates a budget to maternal and child health measures.

7.2 Recommendations

Based on the above, there are several possible areas for further Japanese cooperation with Laos:

(1) Improvement of Access to Health Services

In order to realise universal access to health services the geographical access to health service needs to be improved. It is expected that improving road infrastructure will ensure an easier and quicker means of access to health services.

It is also necessary to increase the number of service delivery posts, especially in remote areas where it is difficult to reach the services. The number of health centers has been increasing, but it is also important to improve service quality. Japan might be able to provide comprehensive support for strengthening primary health services by coordinating various schemes including grant aid, technical cooperation, dispatching volunteers, providing equipment, constructing health posts through grant aid scheme, strengthening immunization and antenatal and postnatal care at health center and expanding outreach services through capacity development for human resources including health volunteers.

It is equally important to ensure better access to services by building a network inside communities for promoting health education and awareness activities, patient transportation and enable rapid response in emergencies. In regards to awareness activities, it would be effective to actively involve communities in promoting services and informing them about the concept and the significance of health insurance as a free delivery policy. Obtaining health insurance is expected to result in an increase in the use of maternal services and a reduction of maternal mortality ratio.

The government of Laos plans to achieve universal health insurance by 2020, but the coverage ratio remains just over 10%. The government expressed the intention to integrate the various schemes in the future. For achieving universal health insurance, it is essential to increase the coverage of people in the informal sector, the majority of total population. In developing and improving a health insurance system, Japan can build on its experiences and achievements in Thailand.

(2) Strengthening Primary Health Care (PHC) Service Delivery System

1) Support health human resource development in rural areas

As mentioned earlier, it is essential to allocate human resources in rural areas in order to improve patients' access to health services. Japan has experience in training medical students and postgraduate training through "Project for Strengthening Medical Education and Research for the Setthathirath Hospital." The experience and knowledge gained at the central level through the support to Setthathirath Hospital as a teaching hospital could benefit supporting district hospitals that accept trainees as a teaching hospital in the future. This will contribute to the expansion of training institutes and increase in the number of qualified human resources for health, which in turn improves equal health access for patients in rural areas.

Regarding the placement of health human resources, Laos has not been able to establish proper placement based supply and demand. As described in Chapter 5, the Health Personnel Information Management System (HPIMS) is currently being developed by the Department of Organization and Personnel, MOH. Supporting the establishment of HPIMS at provincial and district levels with serious shortage of human resources would be an effective input under the human resource development plan.

2) Strengthen health administrative capacity at local level

Japan has contributed to the development of the project coordination mechanism at the central level through "Capacity Development for Sector-Wide Coordination in Health" and "Capacity Development for Sector-Wide Coordination in Health Phase II", targeting the Ministry of Health. The project coordination mechanism is however also required at the local level, and basic management skills such as leadership and communication skills as well as project management capacity such as financial management, monitoring, evaluation are needed. Japan can use its experiences from the above mentioned projects and strengthen the management capacity of government officials who support health human resources at the rural level.

ATTACHMENTS

Attachment 1: Major Health Indicators

Attachment 2: References

Attachment 1: Major Health Indicators (Lao People's Democratic Republic)

Lao People's Democratic Republic				MDGs	Sources	1990	2000	Latest	Latest year	Latest in Region	(Latest year)	Region
0 General Information	0.1 Demography	0.1.01	Population, total		WDI	4,192,414	5,317,060	6,201,000	2010	1,961,558,757	(2010)	East Asia & Pacific (developing only)
		0.1.02	Population growth (annual %)		WDI	2.8	1.8	1.4	2010	0.7	(2010)	East Asia & Pacific (developing only)
		0.1.03	Life expectancy at birth, total (years)		WDI	54.3	61.4	67.1	2010	72.2	(2010)	East Asia & Pacific (developing only)
		0.1.04	Birth rate, crude (per 1,000 people)		WDI	41.6	30.5	22.8	2010	14.2	(2010)	East Asia & Pacific (developing only)
		0.1.05	Death rate, crude (per 1,000 people)		WDI	13.2	8.6	6.3	2010	7.0	(2010)	East Asia & Pacific (developing only)
		0.1.06	Urban population (% of total)		WDI	15.4	22.0	33.2	2010	46.0	(2010)	East Asia & Pacific (developing only)
	0.2 Economic・Development Condition	0.2.01	GNI per capita, Atlas method (current US$)		WDI	200	280	1,040	2010	3,695.8	(2010)	East Asia & Pacific (developing only)
		0.2.02	GNI growth (annual %)		WDI		4.7	5.1	2010	10.0	(2010)	East Asia & Pacific (developing only)
		0.2.03	Total enrollment, primary (% net)	2.1	WDI	66.6	78.1	89.0	2008	94.4	(2007)	East Asia & Pacific (developing only)
		0.2.04	Ratio of female to male primary enrollment (%)	3.1	WDI	79.3	85.3	90.5	2008	101.1	(2009)	East Asia & Pacific (developing only)
		0.2.05	Literacy rate, adult total (% of people ages 15 and above)		WDI		69.6	72.7	2005	93.5	(2009)	East Asia & Pacific (developing only)
		0.2.06	Human Development Index		HDR	0.24	0.49	0.52	2011	0.67	(2011)	East Asia and the Pacific
		0.2.07	Human Development Index (rank)		HDR	129/160	143/173	138 / 187	2011			
		0.2.08	Poverty gap at $1.25 a day (PPP) (%)		WDI			9.0	2008	3.4	(2008)	East Asia & Pacific (developing only)
	0.3 Water and Sanitation	0.3.01	Improved water source (% of population with access)	7.8	HNP Stats		45	67	2010	89.9	(2010)	East Asia & Pacific (developing only)
		0.3.02	Improved sanitation facilities (% of population with access)	7.9	HNP Stats		26	63	2010	65.6	(2010)	East Asia & Pacific (developing only)
1 Health Status of People	1.1 Mortality and Morbidity	1.1.01	Age-standardized mortality rate by cause (per 100,000 population) - Communicable		GHO			376	2008	74	(2008)	Western Pacific
		1.1.02	Age-standardized mortality rate by cause (per 100,000 population) - Noncommunicable		GHO			771	2008	534	(2008)	Western Pacific
		1.1.03	Age-standardized mortality rate by cause (per 100,000 population) - Injuries		GHO			107	2008	64	(2008)	Western Pacific
		1.1.04	Cause of death, by communicable diseases and maternal, prenatal and nutrition conditions (% of total)		HNP Stats			41.3	2008	13.4	(2008)	East Asia & Pacific (developing only)
		1.1.05	Cause of death, by non-communicable diseases (% of total)		HNP Stats			48.3	2008	76.3	(2008)	East Asia & Pacific (developing only)
		1.1.06	Cause of death, by injury (% of total)		HNP Stats			10.4	2008	10.3	(2008)	East Asia & Pacific (developing only)
		1.1.07	Distribution of years of life lost by broader causes (%) - Communicable		GHO			58	2008	19	(2008)	Western Pacific
		1.1.08	Distribution of years of life lost by broader causes (%) - Noncommunicable		GHO			28	2008	63	(2008)	Western Pacific
		1.1.09	Distribution of years of life lost by broader causes (%) - Injuries		GHO			13	2008	18	(2008)	Western Pacific
	1.2 Maternal and Child Health	1.2.01	Maternal mortality ratio (modeled estimate, per 100,000 live births)	5.1	MDGs	1200	790	580	2008	88.7	(2008)	East Asia & Pacific (developing only)
		1.2.02	Adolescent fertility rate (births per 1,000 women ages 15-19)	5.4	MDGs		53.4	33.6	2010	18.8	(2010)	East Asia & Pacific (developing only)
		1.2.03	Mortality rate, under-5 (per 1,000)	4.1	MDGs	144.8	88.1	53.8	2010	24.3	(2010)	East Asia & Pacific (developing only)
		1.2.04	Mortality rate, infant (per 1,000 live births)	4.2	MDGs	100.3	64.4	42.1	2010	19.9	(2010)	East Asia & Pacific (developing only)
		1.2.05	Low-birthweight babies (% of births)		HNP Stats		14.3	10.8	2006	6.4	(2010)	East Asia & Pacific (developing only)
		1.2.06	Fertility rate, total (birth per woman)		HNP Stats	6.2	4.2	2.7	2010	1.8	(2010)	East Asia & Pacific (developing only)
	1.3 Infectious Diseases	1.3.01	a) Prevalence of HIV, male (% ages 15-24)	6.1	MDGs			0.1	2009			
			b) Prevalence of HIV, female (% ages 15-24)	6.1	MDGs			0.2	2009			
		1.3.02	Notified cases of malaria per 100,000 population	6.6	MDGs Database			327	2008			
		1.3.03	a) Malaria death rate per 100,000 population, all ages	6.6	MDGs Database			1	2008	6	(2009)	South-Eastern Asia
			b) Malaria death rate per 100,000 population, ages 0-4	6.6	MDGs Database			0	2008	18	(2009)	South-Eastern Asia
		1.3.04	Tuberculosis prevalence rate per 100,000 population (mid-point)	6.9	MDGs Database	157	152	130	2010	344	(2009)	South-Eastern Asia
		1.3.05	Incidence of tuberculosis (per 100,000 people)	6.9	MDGs	88	85	90	2010	123	(2010)	East Asia & Pacific (developing only)
		1.3.06	Tuberculosis death rate (per 100,000 people)	6.9	MDGs	16	16	11	2010	12	(2010)	East Asia & Pacific (developing only)
		1.3.07	Prevalence of HIV, total (% of population ages 15-49)		HNP Stats	0.1	0.1	0.2	2009	0.2	(2009)	East Asia & Pacific (developing only)
		1.3.08	AIDS estimated deaths (UNAIDS estimates)		HNP Stats	100	100	200	2009			
		1.3.09	HIV incidence rate, 15-49 years old, percentage (mid-point)		MDGs Database							
		1.3.10	Paritial Prioritization Score by the Global Fund (HIV)		GF			4	2012			
			Paritial Prioritization Score by the Global Fund (Malaria)		GF			7	2012			
			Paritial Prioritization Score by the Global Fund (TB)		GF			7	2012			
	1.4 Nutrition	1.4.01	Prevalence of wasting (% of children under 5)		HNP Stats		17.5	7.3	2006			
2 Service Delivery	2.1 Maternal and Child Health	2.1.01	Births attended by skilled health personnel, percentage	5.2	MDGs Database			20.3	2006	72.0	(2009)	South-Eastern Asia
		2.1.02	Birth by caesarian section		GHO			2	2010	24.4	(2011)	Western Pacific
		2.1.03	Contraceptive prevalence (% of women ages 15-49)	5.3	MDGs		32.2	38.4	2005	77.0	(2010)	East Asia & Pacific (developing only)
		2.1.04	Pregnant women receiving prenatal care (%)	5.5	HNP Stats			71.0	2010	92.2	(2010)	East Asia & Pacific (developing only)
		2.1.05	Pregnant women receiving prenatal care of at least four visits (% of pregnant women)	5.5	HNP Stats							
		2.1.06	Unmet need for family planning, total, percentage	5.6	MDGs Database		39.5	27	2005	10.9	(2008)	South-Eastern Asia
		2.1.07	1-year-old children immunized against: Measles	4.3	Childinfo	32	42	64	2010	95	(2010)	East Asia & Pacific
		2.1.08	1-year-old children immunized against: Tuberculosis		Childinfo	26	69	72	2010	97	(2010)	East Asia & Pacific
		2.1.09	a) 1-year-old children immunized against: DPT (percentage of infants who received their first dose of diphtheria, pertussis and tetanus vaccine)		Childinfo	41	83	81	2010	96	(2010)	East Asia & Pacific
			b) 1-year-old children immunized against: DPT (percentage of infants who received three doses of diphtheria, pertussis and tetanus vaccine)		Childinfo	18	53	74	2010	94	(2010)	East Asia & Pacific
		2.1.10	1-year-old children immunized against: Polio		Childinfo	26	57	76	2010	96	(2010)	East Asia & Pacific
		2.1.11	Percentage of infants who received three doses of hepatitis B vaccine		Childinfo			74	2010	94	(2010)	East Asia & Pacific
	2.2 Infectious Diseases	2.2.01	Condom use with non regular partner, % adults (15-49), male	6.2	MDGs							
		2.2.02	Condom use with non regular partner, % adults (15-49), female	6.2	MDGs							

Attachment 1: Major Health Indicators (Lao People's Democratic Republic)

Lao People's Democratic Republic				MDGs	Sources	1990	2000	Latest	Latest year	Latest in Region	(Latest year)	Region
		2.2.03	Men 15-24 years old with comprehensive correct knowledge of HIV/AIDS, percentage	6.3	MDGs Database							
		2.2.04	Women 15-24 years old with comprehensive correct knowledge of HIV/AIDS, percentage	6.3	MDGs Database					24	(2005-2010)	South-Eastern Asia
		2.2.05	Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years	6.4	MDGs Database							
		2.2.06	Use of insecticide-treated bed nets (% of under-5 population)	6.7	HNP Stats		17.7	40.5	2006			
		2.2.07	Children under 5 with fever being treated with anti-malarial drugs, percentage	6.8	MDGs Database		8.7	8.2	2006			
		2.2.08	Tuberculosis treatment success rate under DOTS, percentage	6.10	MDGs Database		77	93	2008	89	(2008)	South-Eastern Asia
		2.2.09	Antiretroviral therapy coverage (% of people with advanced HIV infection)	6.5	MDGs			67.0	2009			
		2.2.10	People aged 15 years and over who received HIV testing and counselling, estimated number per 1,000 adult population		GHOr			10.2	2010			
		2.2.11	Testing and counselling facilities, estimated number per 100,000 adult population		GHOr			4.4	2010			
		2.2.12	Pregnant women tested for HIV, estimated coverage (%)		GHOr			2	2010			
		2.2.13	Percentage of HIV-infected pregnant women who received antiretroviral drugs to reduce the risk for mother-to-child transmission (Mid point)	6.5	MDGs Database							
		2.2.14	Tuberculosis case detection rate (all forms)		HNP Stats	50.0	49.0	72.0	2010	76	(2010)	East Asia & Pacific (developing only)
		2.2.15	Tuberculosis treatment success rate (% of registered cases)	6.10	MDGs		77.0	93.0	2009	92	(2009)	East Asia & Pacific (developing only)
	2.3 Nutrition	2.3.01	Vitamin A supplementation coverage rate (% of children ages 6-59 months)		HNP Stats			83.1	2010			
		2.3.02	Consumption of iodized salt (% of households)		HNP Stats		75.4	83.8	2006	85.7	(2010)	East Asia & Pacific (developing only)
	2.4 Quality and Coverage	2.4.01	Estimate of health formal coverage		ILO			16.1		11.6		Countries of very high vulunerability
		2.4.02	Population not covered (%) due to financial resources deficit		ILO			93.7		85.8		Countries of very high vulunerability
		2.4.03	Population not covered (%) due to professional health staff dificit		ILO			67.0		74.6		Countries of very high vulunerability
3 Health System	3.1 Human Resources	3.1.01	Physicians (per 1,000 people)		HNP Stats	0.23		0.27	2005	1.2	(2010)	East Asia & Pacific (developing only)
		3.1.02	Midwives (per 1,000 people)		HNP Stats					0.04	(2002)	East Asia & Pacific (developing only)
		3.1.03	Nurses (per 1,000 people)		HNP Stats					1	(2001)	East Asia & Pacific (developing only)
		3.1.04	Dentistry personnel density (per 10,000 population)		GHO			0.4	1996	1	(2007)	Western Pacific
		3.1.05	Density of pharmaceutical personnel (per 10,000 population)		GHO					4.0	(2007)	Western Pacific
	3.2 Health Financing	3.2.01	Health expenditure, total (% of GDP)		HNP Stats		3.2	4.5	2010	4.8	(2010)	East Asia & Pacific (developing only)
		3.2.02	Health expenditure, public (% of total health expenditure)		HNP Stats		32.5	33.3	2010	53.4	(2010)	East Asia & Pacific (developing only)
		3.2.03	Health expenditure, private (%) of total health expenditure)		HNP Stats		67.5	66.7	2010	46.6	(2010)	East Asia & Pacific (developing only)
		3.2.04	Out-of-pocket health expenditure (% of private expenditure on health)		HNP Stats		91.8	76.7	2010	67.0	(2010)	East Asia & Pacific (developing only)
		3.2.05	Health expenditure, public (% of government expenditure)		HNP Stats		5.1	5.9	2010	9.3	(2004)	East Asia & Pacific (developing only)
		3.2.06	External resources for health (% of total expenditure on health)		HNP Stats		30.3	15.1	2010	0.4	(2010)	East Asia & Pacific (developing only)
		3.2.07	Social security expenditure on health as a percentage of general government expenditure on health		GHO			5.0	2010	68.6	(2009)	Western Pacific
		3.2.08	a) Health expenditure per capita (current US$)		HNP Stats		10.2	46.2	2010	182.8	(2010)	East Asia & Pacific (developing only)
			b) Per capita total expenditure on health (PPP int. $)		GHO			15	2010	614	(2009)	Western Pacific
		3.2.09	Per capita government expenditure on health at average exchange rate (US$)		GHO			97	2010	361	(2009)	Western Pacific
	3.3 Facilities, Equipments and Supplies	3.3.01	a) Median availability of selected generic medicines (%) - Public		GHO							
			b) Median availability of selected generic medicines (%) - Private		GHO							
		3.3.02	a) Median consumer price ratio of selected generic medicines - Public		GHO							
			b) Median consumer price ratio of selected generic medicines - Private		GHO							
		3.3.03	Hospital beds (per 1,000 population)		HNP Stats	2.6		0.7	2010	3.9	(2009)	East Asia & Pacific (developing only)

WDI: World Development Indicators & Global Development Finance (http://databank.worldbank.org/ddp/home.do) (Accessed 06/2012)
HDR: Human Development Reports (http://hdr.undp.org/) (Accessed 06/2012)
HNP Stats: Health Nutrition and Population Statistics (http://databank.worldbank.org/ddp/home.do) (Accessed 06/2012)
GF: Global Fund eligibility list for 2012 funding channels, the Global Fund to Fight AIDS, Tuberculosis and Malaria (http://www.theglobalfund.org/en/application/applying/ecfp/) (Accessed 06/2012)
GHO: Global Health Observatory Country Statistics (http://www.who.int/gho/countries/en/) (Accessed 06/2012)
GHOr: Global Health Observatory Repository (http://apps.who.int/ghodata/) (Accessed 06/2012)
MDGs: Millennium Development Goals (http://databank.worldbank.org/ddp/home.do) (Accessed 06/2012)
MDG database: Millennium Development Goals Indicators (http://mdgs.un.org/unsd/mdg/) (Accessed 06/2012). Regional data is available on The Millennium Development Goals Report Statistical Annex 2011 (United Nations).
Childinfo: Childinfo UNICEF (http://www.childinfo.org/) (Accessed 06/2012)
ILO: World Social Security Report 2010/11: Providing coverage in times of crisis and beyond. International Labour Office Geneva: ILO 2010.

1.3.10 Partial Prioritization Score is composed of the income level score for the country and the disease burden score for the particular disease in the country. The minimum score is 3 and the maximum score is 12.

2.4.01 Estimate of health formal coverage is indicated as percentage of population covered by state, social, private, company-based, trade union, mutual and other health insurance scheme.

2.4.02 Population not covered (%) due to financial resources deficit (based on median value in low-vulnerability group of countries) uses the relative difference between the national health expenditure in international $ PPP (excluding out-of-pocket) and the median density observed in the country group with low levels of vulnerability as a benchmark for developing countries. The rate can be calculated using the following formula:

Per capita health expenditure not financed by private households' out-of-pocket payments (PPP in int. $) [A]
Population (in thousands) total [B]
Total health expenditure not financed by out of pocket in int. $ PPP (thousands) [C = A x B]
Population covered by total health expenditure not financed by out-of pocket if applying Benchmark* (thousands) [D = C ÷ Benchmark]**
Percentage of the population not covered due to financial resources deficit (%) [F = (B - D) ÷ B x 100]
*Benchmark: Total health expenditure not financed by out-of-pocket per capita = 350 international $ PPP.
**This formula was partially modified from the original in the source to suit an actual calculation.

2.4.03 Population not covered (%) due to professional health staff dificit uses as a proxy the relative difference between the density of health professionals in a given countries and its median value in countries with a low level of vulnerability. The rate can be calculated using the following formula:

Total of health professional staff [A = B + C]
Number of nursing and midwifery personnel [B]
Number of physicians [C]
Total population (in thousands) [D]
Number of health professional per 10,000 persons [F = A ÷ D x 10]
Total population covered if applying Benchmark* (thousands) [E = A ÷ Benchmark x 10]
Percentage of total population not covered due to health professional staff deficit [G = (D - E) ÷ D x100]
Benchmark: 40 professional health staff per 10,000 persons.

Attachment 2：References (Lao People's Democratic Republic)

	TITLE	AUTHOR	URL	YEAR
1	The Lao People's Democratic Republic (web page) 【In Japanese】	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/area/laos/	
2	World Development Indicators (WDI) and the Global Development Finance (GDF) databases	World Data Bank	http://databank.worldbank.org/ddp/home.do?Step=2&id=4&DisplayAggregation=N&SdmxSupported=Y&CNO=2&SET_BRANDING=YES.	
3	Human Development Report 2011	UNDP	http://hdr.undp.org/en/reports/global/hdr2011/	
4	National Statistics Center of the Lao PDR (web page)		http://www.nsc.gov.la/	
5	ODA Country Databook (Lao PDR) 【In Japanese】	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/shiryo/kuni/11_databook/pdfs/01-11.pdf	
6	Health Strategy up to the Year 2020	Ministry of Health		2000
7	The VIIth Five-Year Health Sector Development Plan(2011-2015)	Ministry of Health		2011
8	Mortality and burden of disease(Lao People's Democratic Republic	WHO	http://www.who.int/countries/lao/en/	
9	Health Nutrition and Population Statistics	World Data Bank	http://databank.worldbank.org/ddp/home.do	
10	Accelerating Progress Towards the MDGs	The Government of Lao PDR and the United States		2010
11	Global Health Observatory	WHO	http://apps.who.int/ghodata/	
12	Strategy and Planning Framework for the Integrated Package of Maternal, Neonatal and Child Health Services 2009-2015	Ministry of Health		2009
13	Millennium Development Goals Indicators	United Nations	http://mdgs.un.org/unsd/mdg/data.aspx	
14	Lao Reproductive Health Survey 2005	Committee for Planning and Investment, National Statistics Center and UNFPA		2007
15	The state of the world's children 2011	UNICEF		2011
16	Lao PDR UNGASS 2010 Country Progress Report	National Committee for the Control of AIDS		2010
17	WHO Report 2011. Global Tuberculosis Control	WHO		2011
18	World Malaria Report 2010	WHO		2010
19	Tracking progress on child and maternal nutrition	UNICEF		2009
20	Strategy and Planning Framework for the Integrated Package of Maternal Neonatal and Child Health Services 2009-2015	Ministry of Health		2009
21	Millennium Development Goals Progress Report Lao PDR	The Government of Lao PDR		2008
22	National Nutrition Policy	Ministry of Health		2008
23	Childinfo	UNICEF	http://www.childinfo.org/	

Attachment 2：References (Lao People's Democratic Republic)

	TITLE	AUTHOR	URL	YEAR
24	National Health Statistics Report FY2009-2010	Ministry of Health		2010
25	Noncommunicable Diseases in the Western Pacific Region: A Profile	WPRO		2012
26	Lao People's Democratic Republic country profile 2011	WPRO	http://www.wpro.who.int/countries/lao/en/index.html	
27	Laos Health Sector Analysis Paper【In Japanese】	JICA Laos Office		2009
28	Skilled Birth Attendance Development Plan Lao PDR 2008-2012	Ministry of Health		2009
29	Lao Reproductive Health Survey 2005	UNFPA		
30	National Strategy and Action Plan on HIV/AIDS/STI 2011-2015	National Committee for the Control of AIDS		2010
31	National Strategy for Malaria Control and Pre-Elimination 2011-2015	Ministry of Health		2010
32	Country Partnership Strategy for Lao Peoples Democratic Republic for the Period FY12-FY16	The World Bank		2012
33	Report on STEPS Survey on Non Communicable Diseases. Risk Factors in Vientiane Capital city, Lao PDR	WHO		2010
34	Health Personnel Development Strategy 2020	Ministry of Health		2010
35	Human Resource for Health in Maternal, Newborn and Child Health, A Profile of Lao PDR	Human Resource for Health Knowledge Hub, University of New South Wales and Burnet Institute		2011
36	Health System in Laos【In Japanese】	National Center for Global Health and Medicine		2010
37	Terminal Evaluation Report on Project for Medical Education and Research for the Setthathirath Hospital【In Japanese】	JICA		2010
38	Improving rural retention of health workers in Lao People's Democratic Republic: Technical workshop meeting eport	WHO		2010
39	Capacity Plus, Costing of Incentives to Attract and Retain Rural Health Workers in Lao PDR	Ministry of Health, WHO, USAID		2012
40	Global Health Exdpenditure Database, Vietnam	WHO	http://apps.who.int/nha/database/StandardReport.aspx?ID=REP_WEB_MINI_TEMPLATE_WEB_VERSION&COUNTRYKEY=84518	
41	Health Financing Strategy, Lao PDR 2011-2015	Ministry of Health		2011
42	Basic data collection survey on health sector in Laos【In Japanese】	JICA		2012
43	Country Information Sheet in Health Sector【In Japanese】	JICA		

Attachment 2：References (Lao People's Democratic Republic)

	TITLE	AUTHOR	URL	YEAR
44	WHO Country Cooperation Strategy for the Lao People's Democratic Republic 2012-2015	WHO		2011
45	Summary Results Matrix: Government of Lao PDR – UNICEF Country Programme, 2012 – 2015	UNICEF	http://www.unicef.org/about/execboard/files/Lao_PDR_results_matrix_March_11_correction_28_April.pdf	
46	Country Partnership Strategy Lao People's Democratic Republic 2012-2016	Asian Development Bank		
47	Country Grant Portfolio	GFATM	http://portfolio.theglobalfund.org/en/Country/Index/PNG	updated on 16 May 2012
48	Country Assistant Strategy	Ministry of Foreign Affairs of Japan	http://www.mofa.go.jp/mofaj/gaiko/oda/seisaku/hoshin/pdfs/laos.pdf	2012