ASIAN DEVELOPMENT BANK

RRP: LAO 31348

REPORT AND RECOMMENDATION

OF THE

PRESIDENT

TO THE

BOARD OF DIRECTORS

ON A

PROPOSED LOAN

TO THE

LAO PEOPLE'S DEMOCRATIC REPUBLIC

FOR THE

PRIMARY HEALTH CARE EXPANSION PROJECT

July 2000

CURRENCY EQUIVALENTS
(as of 14 July 2000)

Currency Unit	–	Kip (KN)
KN1.00	=	$0.0001262
$1.00	=	KN7,920

For the purpose of calculations in this Report, an exchange rate of $1.00=KN7,500 has been used. This was the rate generally prevailing at the time of Project Appraisal.

ABBREVIATIONS

ADB	-	Asian Development Bank
AusAid	-	Australian Agency for International Development
BME	-	benefit monitoring and evaluation
CCL	-	Comité de Cooperation avec le Lao
DALY	-	disability-adjusted life year
GTZ	-	Germanische Technische Zusammenarbeit
HIV/AIDS	-	human immunodeficiency virus/acquired immune deficiency syndrome
JICA	-	Japan International Cooperation Agency
Lao PDR	-	Lao People's Democratic Republic
LCB	-	local competitive bidding
MCH	-	maternal and child care
MMR	-	maternal mortality ratio
MOH	-	Ministry of Health
NGO	-	nongovernment organization
PHC	-	primary health care
PIO	-	project implementation office
PMD	-	Prime Minister's decree
PMO	-	project management office
PPTA	-	project preparatory technical assistance
STD	-	sexually transmitted diseases
TA	-	technical assistance
UNAIDS	-	United Nations agencies against AIDS
UNDP	-	United Nations Development Programme
UNFPA	-	United Nations Population Fund
UNICEF	-	United Nations Children Fund
VHP	-	village health care provider
WHO	-	World Health Organization

NOTES

(i) The fiscal year (FY) of the Government ends on 30 September.
(ii) In this report, "$" refers to US dollars.

GLOSSARY

child mortality rate	The annual number of deaths occurring among children less than five years of age expressed per 1,000 live births.
contraceptive prevalence rate	The number of married women 15-49 years of age who are using a modern method of contraception at a given point in time.
disability-adjusted life years (DALY)	A composite index of the years of healthy life lost due to morbidity, mortality and disability, and the benefits that can be achieved by saving those lost years.
district hospital	A fixed facility at the district level that provides basic preventive, promotive, and curative services to catchment populations in a district with 10,000-100,000 people. District hospitals vary in size and have, on the average, 10-15 beds, 15-25 staff, and laboratory facilities.
health center	A fixed health facility at the subdistrict level providing basic preventive, promotive, and curative health services serving catchment populations of 3,000-6,000 people and staffed by a minimum of two trained government health workers.
infant mortality rate	The annual number of deaths occurring among infants less than one year of age expressed per 1,000 live births.
life expectancy at birth	The number of years newborn children would live if subject to the risk prevailing for the cross-section of population at the time of their birth.
maternal mortality ratio	The number of maternal deaths per 100,000 live births due to complications of, or medical conditions aggravated by, pregnancy, childbirth, or postnatal period up to six weeks after delivery.
reproductive health services	Services primarily for women and infants, including counseling; micronutrient supplementation; immunization; other routine prenatal, delivery and postnatal care; emergency obstetric care; birth spacing; control of sexually transmitted diseases and urinary and reproductive tract infections; and management of reproductive tract diseases.
total fertility rate	The number of children that would be born to a woman if she were to go through her reproductive life experiencing the current fertility level of her age group.
village health care provider	Trained health practitioner, drug seller, traditional birth attendant, traditional healer, herbalist, or village volunteer who already provides care at the village level on a fee-for-service basis.

CONTENTS

		Page
LOAN AND PROJECT SUMMARY		ii
MAP		vi
I.	PROPOSAL	1
II.	INTRODUCTION	1
III.	BACKGROUND	1
A.	Sector Description	1
B.	Government Policy and Plans	8
C.	External Assistance to the Sector	9
D.	Lessons Learned	10
E.	ADB's Sectoral Strategy	10
F.	Policy Dialogue	11
IV.	THE PROPOSED PROJECT	12
A.	Rationale	12
B.	Objectives and Scope	14
C.	Cost Estimates	20
D.	Financing Plan	21
E.	Implementation Arrangements	22
F.	Executing Agency	25
G.	Environmental and Social Measures	25
V.	PROJECT JUSTIFICATION	28
A.	Financial and Economic Analysis	28
B.	Environment	29
C.	Social Dimensions and Poverty Impact	29
D.	Institutional Sustainability	30
E.	Risks	30
VI.	ASSURANCES	31
VII.	RECOMMENDATION	32
APPENDIXES		33

LOAN AND PROJECT SUMMARY

Borrower: Lao People's Democratic Republic

Project Description: The Project will expand primary health care (PHC) in eight northern provinces of the Lao PDR. It will help to improve access to and quality of essential preventive, promotive and curative health services at village, health center and district levels in 34 underdeveloped districts with 0.9 million people; and improve referral services for 1.7 million people. The Project will also strengthen the institutional capacity of the Ministry of Health (MOH) and all provinces in the Lao PDR to develop PHC.

Classification: Primary: Poverty Reduction
Secondary: Gender and Development

Environmental Assessment: Environmental category: C

Environmental implications were reviewed and no adverse environmental impacts were identified.

Rationale:

Rationale

With a per capita income of $283 and half of the population living in poverty, Lao PDR is one of the poorest countries in the Asia and Pacific Region. The rural poor, in particular women and children, ethnic minorities and other vulnerable groups living in the inaccessible northern hills, suffer from extremely poor health. Life expectancy of only 53 years is the lowest in the region. Most sickness and deaths are from common communicable diseases such as malaria, acute respiratory infections, diarrhea and measles, most of which are preventable or easily curable. Maternal and infant mortality and fertility are among the highest in the region, yet reproductive health services are not readily available. The existing network of health facilities has inadequate coverage and mainly provides a limited range of curative services of often sub-standard quality. As much as half of the rural population do not have access to preventive and promotive services and first referral care, in particular in the northern hills.

The Government, as a cornerstone of its social policy, accords high priority to the improvement of the health status of the population. PHC has been identified as the most cost-effective approach to provide basic health services. The Government recently approved a PHC policy that aims to make a basic package of health care available to the entire population, and restructured MOH in support of PHC. The Government has requested ADB to support expansion and improvement of PHC delivery, strengthen PHC planning and management, and develop effective financing mechanisms. The Project is specially designed to improve the health status of women and children, ethnic minorities and the rural poor.

Objectives and Scope:

The Project will contribute to the Government's goals of improving the health status and reduce poverty of the population of Lao PDR. The Project will improve PHC for the rural poor by (i) expanding and improving the quality of PHC in the northern region, and (ii) strengthening the institutional capacity for PHC.

The Project will target women and children, ethnic minorities and the rural poor by (i) increasing their physical, social and financial access to essential services, (ii) focussing on interventions and diseases that affect them disproportionally, and (iii) improving the quality of services for these groups. The Project will give priority to cost-effective interventions benefiting women and children including health promotion, reproductive health care, the prevention and treatment of common infections and micronutrient deficiencies, and first referral services.

Component 1 will develop PHC in the northern provinces by (i) increasing access to PHC at health center and village levels; (ii) improving the quality of PHC including training of ethnic minorities staff, (iii) strengthening reproductive health services, and (iv) supporting village health care and promotion.

Component 2 will strengthen the institutional capacity for PHC nationwide by (i) strengthening PHC coordination, (ii) standardizing management systems, (iii) supporting staff development for PHC management, and (iv) testing innovative financing approaches.

Cost Estimates:

The total cost of the Project including physical and price contingencies, and interest charges during implementation is estimated at $25 million equivalent, comprising a foreign exchange cost of $10.7 million equivalent (43 percent) and local currency cost of $14.3 million equivalent (57 percent).

Financing Plan:

($ million)

Source	Foreign Exchange	Local Currency	Total Cost	Percent
ADB	10.7	9.3	20.0	80
Government	0.0	5.0	5.0	20
Total	**10.7**	**14.3**	**25.0**	**100**

Loan Amount and Terms:

The equivalent of SDR14,956,000 ($20 million equivalent) from ADB's Special Fund. ADB loan will be repayable over 32 years, including a grace period of 8 years, with a service charge of 1.0 percent per annum during the grace period and 1.5 percent per annum thereafter.

Period of Utilization: Until 30 June 2007

Executing Agency: Ministry of Health, Lao PDR

Implementation Arrangements:

The steering committee for the project will be the MOH Steering Committee for Monitoring International Assistance, composed of the Minister, Vice-Ministers and Directors of all Departments in MOH, with representation of the Ministry of Finance, the State Planning Committee, and the Committee for Investment and Coordination. The central Project Management Office will be located in the PHC and Rural Development Division of the Cabinet. The Director of this Division, who is responsible for planning, coordination, and monitoring PHC in the country, will be the Project Director. There will be steering committees in all the provinces consisting of representatives of the provincial health service, the planning and budgeting department, and beneficiaries. There will be eight provincial Project Implementation Offices to assist the Project Management Office in implementing component 1. Component 2 will be managed centrally.

Procurement:

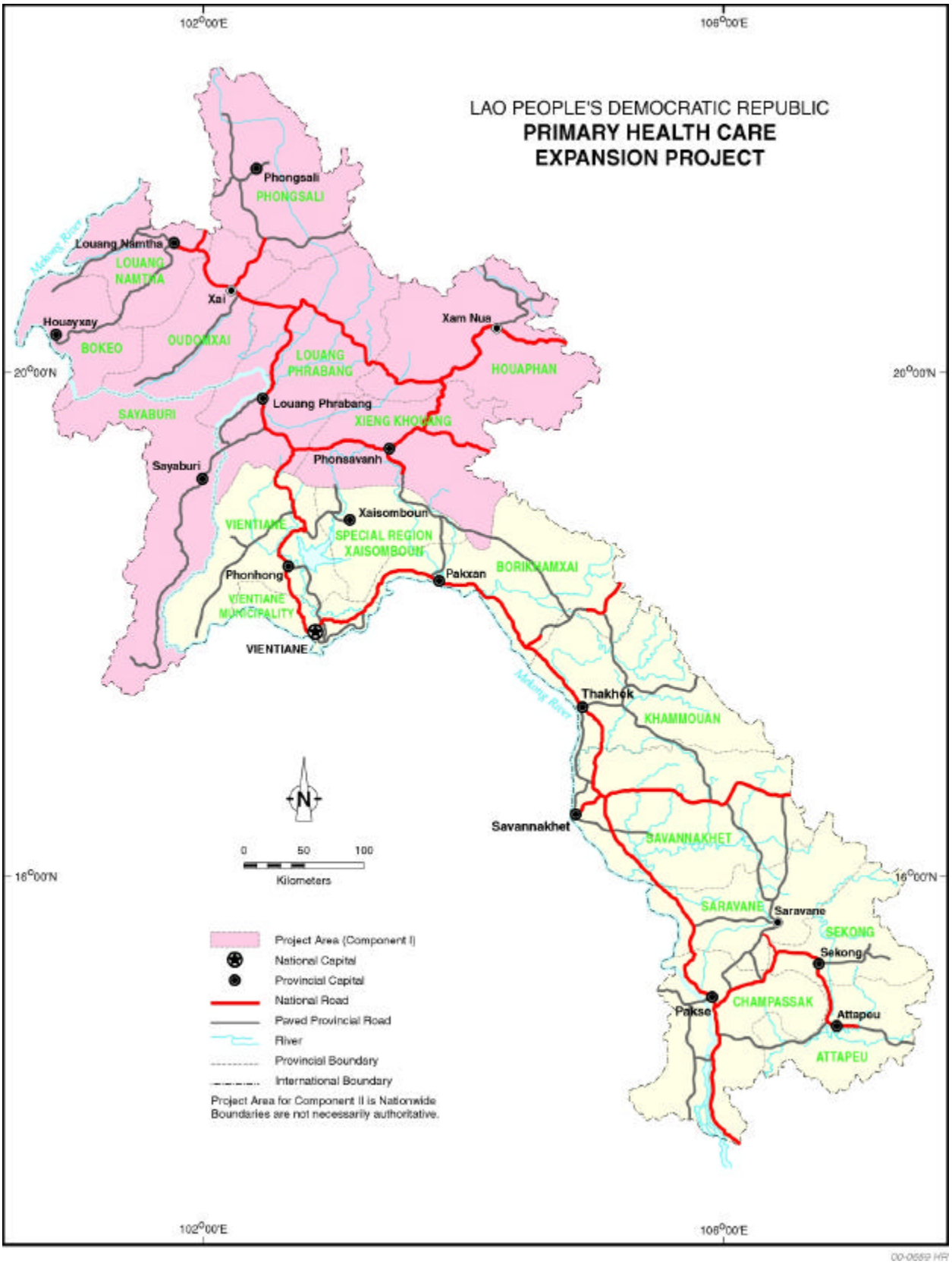
All ADB-financed procurement for the Project will be in accordance with ADB's *Guidelines for Procurement.* Related equipment and material will be combined into packages to simplify procurement. Supply contracts costing more than $500,000 will be procured by international competitive bidding procedures. Supply contracts at $500,000 equivalent or less will follow international shopping procedures, except for some equipment and supplies like hostel beds and furniture, that are locally manufactured and unlikely to attract foreign suppliers. These will be procured through local competitive bidding in accordance with Government procedures acceptable to ADB. Packages of less than $100,000 may be procured on a direct purchase basis. Equipment and materials required at provincial level and costing less than $10,000 may be procured by the Project Implementation Office according to Government procedures acceptable to ADB.

The Project includes construction of 41 health centers and seven hospitals; and renovation or upgrading of six health centers and 17 hospitals. The health facilities are located in remote and scattered locations and are unlikely to attract international bidders. Civil works contracts will be awarded according to local competitive bidding procedures acceptable to ADB. However, if any package is estimated to cost $1.0 million or more, international competitive bidding procedures will be followed.

Consulting Services:

All consultants financed under the loan will be selected and engaged in accordance with ADB *Guidelines on the Use of Consultants* and other procedures acceptable to ADB on the recruitment of domestic consultants. Six international and six domestic individual consultants and one domestic firms will be provided. The international consultants will include chief technical adviser (36 person-months), education and training specialist (6 person-months), management specialist (12 person-months), health sector financing specialist (6 person-months), procurement specialist (6 person-months) and architect (6 person-months). Domestic consultants will include education and training specialist (72 person-months), management specialist (72 person-

	months), health sector financing specialist (72 person-months), accountant (72 person-months), procurement specialist (72 person-months), and architectural monitoring and evaluation specialist (72 person-months). A domestic firm will be contracted for five years for building design and construction supervision.
Estimated Project Completion Date:	End 2006
Project Benefits and Beneficiaries:	The Project aims to provide services to all segments of the population in the project provinces. The Project will focus on reducing poverty by meeting the health and birth spacing needs of the rural poor. This will be done by placing new health facilities near large pockets of in particular underserved ethnic minorities, by training local people to make services more accessible and acceptable, by focussing on reproductive health services for women and children, and by reducing the cost of health services for the poor. The Project will primarily benefit a population of 0.9 million people in 34 out of 61 districts, and improve referral services for 1.7 million people in the eight northern provinces. About 60 percent of the population is estimated to live below the poverty line in the targeted northern provinces. The project will also benefit the poor in other provinces of the country by improving PHC management for better effectiveness, efficiency and equity of PHC.


LAO PEOPLE'S DEMOCRATIC REPUBLIC
PRIMARY HEALTH CARE
EXPANSION PROJECT
102°00'E
106°00'E
20°00'N
16°00'N
Phongsali
PHONGSALI
Louang Namtha
LOUANG NAMTHA
Xai
OUDOMXAI
Houayxay
BOKEO
Xam Nua
HOUAPHAN
LOUANG PHRABANG
Louang Phrabang
SAYABURI
XIENG KHOUANG
Phonsavanh
Sayaburi
Xaisomboun
SPECIAL REGION XAISOMBOUN
VIENTIANE
Phonhong
VIENTIANE MUNICIPALITY
VIENTIANE
Pakxan
BORIKHAMXAI
Mekong River
Thakhek
KHAMMOUAN
Savannakhet
SAVANNAKHET
SARAVANE
Saravane
SEKONG
Sekong
CHAMPASSAK
Pakse
Attapeu
ATTAPEU
N
0
50
100
Kilometers
Project Area (Component I)
National Capital
Provincial Capital
National Road
Paved Provincial Road
River
Provincial Boundary
International Boundary
Project Area for Component II is Nationwide
Boundaries are not necessarily authoritative.
00-0659 HR

I. PROPOSAL

1. I submit for your approval the following Report and Recommendation on a proposed loan to the Lao People's Democratic Republic for the Primary Health Care Expansion Project.

II. INTRODUCTION

2. The Government of the Lao People's Democratic Republic (Lao PDR) has developed a primary health care (PHC) policy[1] to improve the health of its citizens based on the concepts of participation, equity, and sustainability. The Government has received Asian Development Bank (ADB) support for a PHC project[2] in 2 of 18 provinces[3] in the Lao PDR, and has requested support for (i) expanding PHC to the entire northern region, and (ii) strengthening the institutional capacity for PHC management nationwide. Project preparatory technical assistance (TA)[4] for the PHC Expansion Project was approved in May 1998, and implemented between February and December 1999. The Bank undertook Fact-finding from 17 January to 5 February 2000 and Appraisal from 24 April to 12 May 2000. Throughout the Project preparation and appraisal, there was close consultation and coordination with the Ministry of Health (MOH) and other ministries; Government officials at provincial and district levels; multilateral and bilateral funding agencies; nongovernment organizations (NGOs); health workers; community representatives; and potential beneficiaries including people from ethnic minorities. This report is based on Government inputs, the TA report, and Fact-finding and Appraisal Missions. The project framework is in Appendix 1.

III. BACKGROUND

A. Sector Description

1. Economic and Social Context

3. Lao PDR is a hilly and forested country located centrally in the Greater Mekong Region. It has a low population density of 21 persons per square kilometer, a population of about 5.2 million and a population growth rate of about 2.5 percent per year.[5] Based on a recent ADB analysis of the Lao Expenditure and Consumption Surveys of 1992-93 and 1997-98, the poverty incidence may have declined from 63 percent poor and 41 percent very poor in 1992-93 to 47 percent poor and 25 percent very poor in 1997-98.[6] While the 1997 economic crisis spurred the economy in the Lao PDR, the average per capita income has been declining due to inflation and is currently estimated at $283 per year. The poorest provinces are in the northern region, with an estimated 62 percent poor and 38 percent very poor in 1997-98. This analysis also found that the 16 percent reduction in poor people was due to 23 percent growth less 7 percent increase in inequality. The increase in consumption in the lowest quintile was small, suggesting that economic growth had less impact on the very poor. The Government is addressing poverty through gradual economic reforms, social services development, and investment in priority infrastructure such as roads and hydropower. While long-term prospects for the country's economy are favorable, the Government is currently facing a serious financial crisis.

4. The 85 percent of the rural population comprises some 47 distinct ethnic groups. The ethnic Lao constitute about half the population, and engage in agriculture, fishing, and commercial activities in the fertile lowlands of the Mekong and its tributaries. The ethnic minorities mainly live in the hills, where infrastructure is underdeveloped and access to services is poor, particularly in the

---

1 Ministry of Health (MOH). *Policy on Primary Health Care.* February 2000.
2 Loan 1348-LAO(SF): *Primary Health Care Project*, for SDR3,404,000, approved on 19 January 1995.
3 Including Xaysomboun Special Zone and Vientiane Municipality as "provinces".
4 TA 3058-LAO: *Primary Health Care Expansion Project*, for $700,000, approved on 20 August 1998.
5 National Statistical Centre. *Results from the Population Census 1995*. State Planning Committee. 1997. Vientiane.
6 Kakwani N. *Poverty in Lao PDR*. ADB. 2000. Manila. This is an analysis of the Lao Expenditure and Consumption Surveys in 1992-93 and 1997-1998, by the Government of the Lao PDR.

rainy season. The hill tribes are mainly subsistence farmers with occasional cash crops, who, in addition, exploit the abundant forests. The highland provinces in the north score lowest in terms of per capita income, and the northern region accounts for 30 percent of the poor in the Lao PDR. Per the 1995 census, the literacy rate among the Lao and other Tai-Kadai was 70 percent, the Mon-Khmer 38 percent, the Hmong 27 percent, and the Tibeto-Burman 4 percent. Gender differences are more apparent among the ethnic minorities. The literacy rate for Mon-Khmer females is 20 percent, and for Hmong females 9 percent. The United Nations Development Programme (UNDP) human development report for 1998 ranks the Lao PDR 136th of 175 countries.

2. Health Status

5. Compared with other countries in the region, mortality and fertility in the Lao PDR are high. The 1995 population census reported a child mortality rate (children less than five years of age) of 170 per 1,000 live births. The Government estimates that the infant mortality rate has declined from 104 to 85 infant deaths per 1,000 live births since 1995 (footnote 5), and the maternal mortality ratio from 656 to 490 per 100,000 live births since 1993.[7] Only Cambodia has higher reported infant and maternal mortality rates, and the life expectancy of 53 years at birth is the lowest in the Mekong region. The three geographical regions in the Lao PDR (north, central, and south) have significant disparities in health status. The north has the highest infant, child, and maternal mortality; and the lowest life expectancy and literacy rates, according to UNDP data. The total fertility rate is estimated to have declined from 5.6 to 4.5 children per woman since 1995, which is still high.[8] The immediate causes of high mortality seen in the Lao PDR are typical for a country before the transition from high to low fertility and communicable to welfare diseases. High levels of fertility place women at increased risk of maternal morbidity, disability, and mortality, especially in case of early pregnancy, short birth intervals, high parity, malnutrition, illness, and lack of routine and emergency obstetric care, all of which are common problems in the Lao PDR.

6. Common causes of mortality among children are preventable or easily curable conditions such as malaria, respiratory and intestinal infections, and complications of childbirth. Malaria is a serious health problem with an estimated 1.4 million cases and 14,000 deaths per year, with young children and pregnant and breast feeding mothers most at risk from malaria.[9] Respiratory infections and diarrheal diseases cause respectively 5,500 and 4,000 deaths annually of children under five years. The risk of infection is exacerbated by undernutrition. Nearly one third of Lao households experience insufficient food intake, with women and children suffering most. About 20 percent of babies born alive have low birth weight (below 2.5 kg.), in part due to maternal malnutrition and micronutrient deficiencies. An estimated 41 percent of children under the age of five years suffer from undernutrition; and 12 percent are severely malnourished (footnote 9).

7. Among adults, infections and pregnancy complications are major public health problems. Obstetrical complications during delivery are common, averaging about 10 percent of all deliveries, and are most frequent in the remote northern provinces. The Lao Social Indicator Survey in 1993 found that three-fourths of maternal deaths occur within six weeks of delivery, and one-fourth occur during pregnancy (footnote 7). Deaths during pregnancy result from complications of induced abortion (28 percent); infectious diseases including malaria (25 percent); and other problems such as hemorrhage, abnormal presentation, and spontaneous abortion (22 percent). Tuberculosis is also a major public health problem and common cause of death. The population is also facing an HIV/AIDS epidemic as international travel is increasing. According to the Committee for the Prevention of AIDS, out of 47,762 patients tested up to December 1999, 367 were found to be HIV-

---

[7] Phimmasone K., et. al.. *Women and Children in Lao PDR. Results from the Lao Social Indicator Survey (LSIS)*. Mother and Child Health Institute, MOH. 1994. Vientiane.

[8] UNICEF. *Children and Their Families in the Lao PDR 1996*. UNICEF. 1996. Vientiane.

[9] National Statistical Centre*. National Human Development Report 1998.* UNDP. State Planning Committee. 1998. Vientiane.

positive, half of them between 20 and 29 years of age, and 38 percent females. Surveys, routine blood screening, and behavioral surveillance are not yet done. Key indicators are in Appendix 2.

3. Health Sector Organization

8. The Lao PDR is divided into 3 regions, 18 provinces (including Xaysombaun Special Zone and Vientiane Municipality), and 141 districts. Provinces vary in size from about 70,000 to 700,000 people and have 5 to 12 districts, with 10,000 to 100,000 people per district. MOH is at the apex of a public health system of provincial and district hospitals, and health centers at the subdistrict level.

9. MOH is responsible for health sector planning, policy development, coordination, external financing, and evaluation. It was recently reorganized and contains seven departments: (i) Cabinet, (ii) Human Resources, (iii) Inspection, (iv) Planning and Budgeting, (v) Curative, (vi) Hygiene and Prevention, and (vii) Food and Drug. The Inspection and Planning and Budgeting departments were introduced recently. The new structure includes the MOH Steering Committee for Monitoring International Assistance, composed of the minister and vice-ministers and directors of all departments. The PHC and Rural Development Division was recently established in the Cabinet to coordinate PHC projects and foreign assistance for PHC (para. 29). At least 12 vertical programs are managed by technical institutes and MOH departments, including programs for (i) pediatric infectious diseases, (ii) malaria control, (iii) control of diarrheal diseases, (iv) control of acute respiratory infections, (v) reproductive health, (vi) micronutrient deficiencies and breastfeeding, (vii) control of HIV/AIDS and sexually transmitted diseases, (viii) essential drugs supply, (ix) primary eye care, (x) tuberculosis control, (xi) schistosomiasis control, and (xii) water supply and sanitation.

10. The provincial health office has administrative and technical responsibility for all health services in the province, including the provincial and district hospitals, the network of primary care facilities, implementation of vertical programs, and private sector regulation and inspection. The organization and resources of health services vary significantly among provinces. The provincial hospital provides general referral services including emergency care and surgery. The provincial health system in the Lao PDR is similar to a district health system by World Health Organization (WHO) standards. Due to the basic level of services and training capacity at the provincial level, the Government plans to strengthen the three regional centers to provide advanced training and specialist referral services such as eye and ear surgery, orthopedics, and gynecology.

11. The district health office is responsible for coordinating health services in the district. The district hospital is comparable to a health center in many other countries, providing outpatient care, basic inpatient care with 10-15 beds, a maternal and child health (MCH) clinic, outreach services, and logistic support and supervision of services in the district. Each district has 50-100 villages. Because access to many villages is difficult, MOH has begun constructing subdistrict health centers serving clusters of villages. These are staffed by nurse auxiliaries and sometimes a medical assistant to provide basic curative care, mother and child care, and supervision of village health workers. The geographic coverage of public health services is less than half the population.

12. Based on the TA, 33 percent of the population, when ill, first seeks care from the private or informal sector, compared with 28 percent visiting a government facility first (footnote 4). The informal sector includes drug sellers, birth attendants, traditional healers, and herbalists. There are also many retired nurse auxiliaries previously supported by the agricultural cooperatives that covered nearly the entire country. These village health care providers (VHPs) are an important source of curative care for the villagers.

4. Primary Health Care

13. Following liberation in 1975, basic health care coverage was achieved through the commune system. After the New Economic Mechanism was adopted in 1989, introducing reforms

toward a market economy, the commune system collapsed and funding for health centers dried up, resulting in a dramatic decrease in access to basic health care. MOH responded by setting up technical institutes to implement selective health interventions through vertical programs. At the same time, MOH started rebuilding its network of district hospitals and health centers to develop PHC. Many small projects resulted in a wide variety of PHC delivery strategies with little standardization, reflecting preferences of external funding agencies. The result is an uneven distribution of externally assisted districts adjacent to districts with virtually no PHC support. Since the 1990s, MOH has been making efforts to increase PHC coverage with large-scale projects. Currently, systematic efforts are being made in 7 provinces to increase PHC coverage with the help of external funding. However, in the remaining 11 provinces, PHC delivery essentially is a holdover from the past, and none of the provinces have achieved adequate PHC coverage, in particular affecting ethnic minority populations.

14. The vertical programs for health education, malaria control, rural water supply, immunization, and reproductive health have not succeeded in reaching a large part of the population due to lack of local ownership, irregularity of services, and operational and resource constraints. The malaria control program effectively reached 24 percent of villages, and half the population have access to clean water. Only 32 percent of children 12-23 months are fully immunized. Of women of reproductive age, half are fully immunized with tetanus toxoid. Among married couples of reproductive age, 23 percent use modern contraceptives, compared with 64 percent wanting to space births or avoid more pregnancies. However, knowledge about contraceptive methods is low. In the household survey in 11 provinces, only 33 percent of married women aged 15-49 could name at least one modern contraceptive method (footnote 4).

15. Outpatient services in public health facilities are underused due to poor quality of care, limited range of services, and lack of drugs. Each health center has on average 10 outpatients per day. There are 68 consultations per 1,000 population per year at district level and 214 at provincial level. A district hospital will admit on average 450 people per year and a provincial hospital 2,300. The bed occupancy rate at district and provincial levels is about 40 percent. Surgical operations and deliveries performed in hospitals are still low (footnote 7). Surgical services are limited to provincial hospitals and few district hospitals, as most district hospitals do not have the staff, operating funds, and patient volume to sustain these services. Most health centers perform poorly in MCH and birth spacing services. Health education and growth monitoring are usually not done. Immunization is provided on an outreach basis only once a year. About 72 percent of mothers deliver at home, 7 percent in a hospital, and only 16 percent deliver with the help of a trained medical practitioner. Despite high demand, birth spacing services are not available in health centers and at the village level that would be more accessible to women. Tuberculosis affects the poor disproportionately. However, diagnosis and treatment for the disease are only available at provincial level, making it difficult for the rural poor to access these services.

5. Health Sector Financing

16. Government spending in the health sector has been increasing in real terms since the early 1990s to 1997/98, following which it decreased in real terms as nominal increases did not keep up with inflation. Public health spending as a share of total Government spending has declined since then from about 3 to 2 percent, while public sector funding from other sources increased. According to 1997/98 data, the Government allocated the equivalent of $6.4 million to the health sector, or 0.36 percent of gross domestic product. Total expenditures on health from both public and private sources including for external sources amounted to $55.8 million; about 3.2 percent of gross domestic product or $11.50 per capita. Households financed the major share, 58.1 percent of total expenditures, or $6.70 per person per year, mainly for medicines. External agencies (including NGOs) financed 30.4 percent. The Government contributed 11.5 percent or $1.3 per person per year.

17. User fees were introduced in 1995 via the Prime Minister's Decree (PMD) 52, primarily to overcome the chronic drug shortage in public facilities. User fees for hospital services relate to (i) the sale of drugs (77 percent), (ii) fees for treatment (10 percent), (iii) diagnostic tests (9 percent), and (iv) other fees (4 percent). To contain costs at the health center level, PMD 52 only permits collection of fees for drugs but not for services. Fifty eight percent of patients at national and provincial hospitals are eligible for free or subsidized services. These include civil servants (who make an indirect contribution through social security payments), students, and monks. Poor people are also provided subsidized services in hospitals. About 40 percent of patients receive subsidized services in district hospitals, and in health centers this is even less (as discussed in para. 31). The poorest household quartile was spending on average $2.4 on health care per month, compared to $4.2 by the second quartile, $5 for the third quartile, and $5.5 for the wealthiest group. While the poor are more likely to capture subsidized services, the low expenditure for the poor may also suggests that they use health services less.

18. Data collected for hospitals indicates that revenue from user fees is not only substituting for lower levels of government funding, but is adding real resources for the operations of these facilities. User fees for drugs contribute 39 percent of the operational budget of district hospitals,[10] excluding salaries. So far there is no evidence that the introduction of user charges has had a detrimental effect on overall use of hospitals. On the contrary, patient attendance tends to increase following introduction of a revolving drug fund, and this pattern is found across ethnic groups. In Pak Ou hospital, utilization rates for disadvantaged ethnic groups, women, and children increased. After introducing user fees. When the distance of the villages from the district hospital was adjusted, the finding indicates that access and quality of care are more important determinants of utilization than ethnic group or income. Only civil servants, which had received free care before the introduction of the revolving drug fund, used services less.

6. Key Issues

19. PHC delivery by programs and services is handicapped by the country's poor communication network, the remoteness of its villages, the multiethnic society, the difficult working conditions of the civil servants, weak staff training, and financial constraints. These factors contribute to poor access to PHC, unsatisfactory quality of care, unavailability of reproductive health services, low utilization of services by ethnic minorities, limited PHC management capacity, and low salaries and inadequate operational funds for PHC.

Limited Access to PHC

20. The network of PHC facilities is unevenly distributed, reflecting the pattern of external support. Many villages are more than half a day's travel from the nearest health facility, and more than a day's travel from emergency services. Poor people are reluctant to spend time traveling for medical attention as they loose time to work for food. The study of specific utilization rates per commune in Pakkading district hospital[11] shows that the rate is directly linked to the distance, transportation possibilities, and access to other services. The pattern is the same for hospitalization in Vangvieng hospital[12] where 60 percent of inpatients live near the hospital.

21. The northern region is mountainous and inaccessible, and health education and immunization coverage of the population in this region is low, in particular among ethnic minorities. Access to PHC is irregular and unsystematic, especially in Bokeo, Houaphan, Louang Namtha, and Phongsali provinces. More than 60 percent of the population in these four provinces have no

[10] Dalaloy, P., Minister of Health. *Poverty Reduction and Environmental Health of Lao's Minority Groups*. Presentation at the Manila Social Forum. 1999. Manila.
[11] Noel, A. *Hôpital de District de Ban Pakkading. Rapport d'Activité, 1991–1992*. Comité de Cooperation avec le Laos (CCL). 1992. Vientiane.
[12] Boule, J. *Hôpital Provincial de Vangvieng, Rapport d'Activité Janvier 1993–Juillet 1994*. CCL. 1994. Vientiane.

access to public PHC. These provinces scored lowest on indicators of PHC service delivery and preventive health service outcomes. Of 11 provinces surveyed during the TA (footnote 4), only 32 of 85 districts have satisfactory PHC coverage. For example, in Phongsali Province, only 11 percent of villages are within one hour's travel of a public health facility, and 46 percent within four hours of a hospital. An estimate of health personnel productivity in a district hospital[13] showed productivity of only 25 percent of capacity. Therefore, adding health centers to increase access would not require a net increase in staff.

Inadequate Quality of Care

22. Demand for services depends on the quality of care, which to a large extent is determined by the availability of skilled staff and medicines. A generic problem in the public health system is the poor skills of health personnel. A survey among health personnel working at district hospitals in Xieng Khouang and Oudomxai revealed that many health workers were unable to diagnose and treat common diseases such as malaria, diarrhea, and acute respiratory infections according to the WHO guidelines used in the Lao PDR (footnote 2). Medical personnel lack guidelines to diagnose and treat common illnesses effectively, and supervision is either not done or erratic. In addition, Government salaries are so low that most staff can ill afford to work full time in a health facility, or be posted to a remote health centers where they cannot earn an additional income. Health centers are staffed mostly by less qualified staff whose training has not adequately prepared them for clinical or managerial responsibilities. Therefore, new facilities need to be placed strategically to take into account the socioeconomic constraints of staff, and adequate compensation and incentives should be provided, in particular for staff working in remote locations.

23. Medicines and birth spacing commodities are in short supply due to funding, procurement and distribution constraints. The introduction of user charges has improved the availability of drugs for hospital patients. However, the Government budget to subsidize drugs has remained small. Procurement and distribution constraints have made the availability of medicines very irregular. In general, the hilly terrain, scattered population, and poor infrastructure makes it more difficult to operate remote health facilities and provide quality services. This needs to be taken into consideration when planning the extension of the network of health services.

Lack of Reproductive Health Services

24. Maternal morbidity, mortality and disability are unacceptably high, and there is a large unmet demand for birth spacing. In addition, there are increasing risks of an HIV/AIDS epidemic for which the population is ill prepared. The provinces are trying to address the gap in reproductive health services by operating a separate program in each province managed by a team of professional and dedicated staff. In addition, the United Nations Fund for Population Activities (UNFPA) and other external agencies support MOH to strengthen the reproductive health program.

25. However, at the health center level services are mostly curative, and MCH and birth spacing services are generally not available or are provided irregularly at limited hours. Reasons include lack of trained staff, equipment, and supplies. Also at first referral level, the facilities for routine delivery and emergency obstetric care are highly inadequate, lacking all kinds of equipment and supplies. In addition, the operating budget for MCH and birth spacing services is inadequate so that staff training, supervision, and campaigns are severely restricted. For example, in Louang Namtha Province the entire operating budget for the MCH team was estimated at $450 per month. These are compelling arguments to support expanding MCH services and improve its financing.

[13] Noel, A. *Pakkading, Experiénce de Recouvrement des Coûts dans un Hôspital de District au Laos*. CCL. 1992. Vientiane.

Low Use of Health Services by Ethnic Minorities

26. Specific factors affect low use of health services by ethnic minorities. First, the geographical distribution of health facilities affects the use of health services by ethnic minorities. The ethnic minorities more often live in scattered hamlets in remote and mountainous areas that have very poor infrastructure and that are only accessible in the dry season. It is very difficult and expensive to provide health services in these areas. While the majority ethnic group mostly live in the lowlands, the ethnic minorities mainly live on the slopes such as Mon-Khmer, and top of the hills such as the Hmong and the very poor Tibeto-Burman groups. They need certain essential services that are often not in the standard package of health centers, such as iodine supplementation and tuberculosis treatment. Ethnic groups living in remote areas may also not know about the availability of modern health services, or not have the time and energy to seek treatment a day's walk or more from their home, requiring them to sleep overnight at the health center.

27. Also where health services are accessible, use by ethnic minorities may still be low. In addition to concerns about the appropriateness of the health services, they often cite poverty as a reason for not seeking medical treatment, or fear they will not be able to pay for the services. Most ethnic minorities subsist on shifting cultivation, hunting, and collecting forest products. Less than 10 percent are engaged in commercial activities, and households often do not have cash or goods to pay for transport, consultation, and any medicines required. Sociocultural factors may also affect utilization of health services. An important factor is language, as more than 85 percent of minority females do not speak Lao, while less than 5 percent of health workers come from an ethnic minority background. Ethnic groups also rely on spiritual healing, particularly where modern treatment is unavailable. The differences in views between staff and ethnic minorities may also affect the relationship. Accordingly, it is important to train local people as health staff. Most villages have at least one private-sector VHP, who may be a medical practitioner, birth attendant, traditional healer or volunteer from the community. While VHPs are locally accepted as health care providers, their practices are unregulated, their skills questionable, and their supplies limited. They usually do not provide preventive and promotive services. There are many possible causes of low use by ethnic minorities, and each situation should be assessed separately.

Weak PHC Management Capacity

28. The PHC management system is in its infancy and PHC management capacity is limited. Until recently, MOH did not have an organizational entity empowered to coordinate PHC services, programs, and projects funded by external agencies. Many projects followed their own design from which much has been learned, but the projects are difficult to coordinate and monitor. More than half the managers have not been trained in public health management. Essential management systems, such as for planning, monitoring, and supervision are not available or not being used for decision making by the managers, as these are often complex or irrelevant. Weak management capacity has resulted in inadequate coordination, standardization, monitoring, and comparability; and management is essentially reactive.

29. When MOH was reorganized under PMD 20 in 1999, the MOH Steering Committee for the Supervision of International Cooperation was created (para. 9) under the supervision of the Minister of Health. It is empowered to make strategic policy decisions for the health sector. A PHC and Rural Development Division has been created in the Cabinet to coordinate the national PHC program, including planning, coordination of external assistance, monitoring and evaluation. Provincial PHC coordination units will be established in all provincial health offices. This will be the first time that distinct organizational units will be in place to coordinate PHC activities.

Insufficient Financing of PHC

30. The $11.50 per capita spending on all curative and preventive health care in the Lao PDR falls well short of the estimated $15.00 per capita required to provide essential PHC services

alone.[14] Government financing of health care in the Lao PDR through direct subsidies has increased since the early 1990s in nominal terms. However, inflation has decreased the real purchasing power of these increases, and the level of real Government subsidies has decreased.

31. Following PMD 52, fees are charged for drugs, treatment, laboratory tests, x-rays, hospital rooms, medical supplies, and documents. The fees cover supplies only, with a mark-up of about 25 percent for management, transport, and pilferage. Other variable and fixed costs of providing the service are not included in the price, and the prices charged for services in hospitals have not kept up with inflation. Prices that do not sufficiently offset these costs result in PHC services that are not sustainable, and do not allow savings for cross-subsidization. PMD 52 also provides that 20 percent of fees collected for services are passed on to the central Government. This "tax" could be used for cross-subsidy among provinces and monitoring of revenue, but should preferably be retained locally.

32. Although the Government is committed to affordable health services for all, it is increasingly depending on the public to pay for health services. However, the poor may not be able to fully pay for inpatient services and procedures such as caesarian sections for catastrophic illnesses, and may be reluctant to use outpatient care because of user charges. Fortunately, many needy hospital patients receive subsidized treatment. However, health center staff are more reluctant to wave or reduce charges as supplies are limited and it is socially difficult to help some and exclude others at the community level. The possible effect of user charges on the public in general and the poor and ethnic minorities in particular needs to be examined thoroughly in order to plan for improvements.

B. Government Policy and Plans

33. The Lao People's Revolutionary Party Congress aims to ensure that health service provision is expanded to the entire population at the grassroots level; the quality of health services is improved; and vulnerable groups, including mothers and children, receive more attention. Consistent with this mandate, MOH has adopted the PHC approach, which aims to achieve the international goal of "health for all" by making basic health services, including first referral care, available to the entire population in an integrated manner and with full participation of the community. With ADB support, MOH has prepared a PHC policy (see footnote 1) that describes the strategic priorities, delivery system, and organizational structures that will guide PHC expansion in the future. The policy, approved in February 2000, provides a clear vision for strengthening the health system, capacity building, mobilizing resources, and improving health sector performance toward health for all. The Cabinet of MOH has recently been assigned to coordinate the implementation of the policy. For this purpose, the new PHC and Rural Development Division has been created as one of the five divisions of the Cabinet. The division will provide PHC guidelines, coordinate PHC programs and externally funded PHC activities, and monitor and evaluate PHC. The Government will also establish provincial PHC coordination units to strengthen the coordination of services, vertical programs, and projects at the provincial level.

34. The PHC policy identifies nine basic components of PHC: (i) improvements in quality and expansion of the network of health facilities; (ii) health education; (iii) clean water and environmental sanitation; (iv) immunization; (v) MCH and birth spacing services; (vi) nutrition; (vii) prevention and control of common diseases; (viii) treatment of the most common diseases; and (ix) essential drugs and revolving drug funds.

35. According to the PHC Policy and Investment Plan, the design of the PHC network begins at the grassroots level and progressively grows to regional PHC referral facilities. Each level is responsible for providing PHC services, and supporting, supervising, coordinating, and referring patients in a systematic fashion. Trained private sector VHPs with essential drug kits are planned for villages that do not have access to government health centers. Strategically placed health

[14] 1993 World Bank estimate adjusted for inflation rate to 1997/98 dollars for comparison purposes.

centers with three or more trained health workers will serve clusters of villages. Small district hospitals with 15-20 beds are designed to serve as the first level of PHC referral. Provincial hospitals and regional referral facilities are responsible for more advanced medical treatments.

36. The policy framework and political commitment for birth spacing has improved recently. In November 1999, the Government adopted the National Population and Development Policy, which recognized the adverse consequences of high fertility to the health of Lao women and children, and to the economy and well-being of the family. The policy aims to (i) achieve a rate of population growth compatible with socioeconomic development; (ii) motivate and assist people to improve their quality of life by ensuring safe motherhood, reducing morbidity and mortality associated with the reproductive health system, and enabling couples to freely and responsibly decide upon the number and spacing of their children; (iii) improve the status of women and ethnic populations by eliminating disparities; (iv) promote a balanced population distribution; and (v) incorporate population factors and concerns in all policies and plans.

37. Based on the PHC investment plan, MOH is planning to mobilize additional funds from internal and external sources to develop PHC. In addition, MOH is planning to revise PMD 52 to streamline cost recovery in hospitals and drug revolving funds in health centers. This will be based on further analysis of sources and uses of funds in health facilities and pilot tests in selected facilities. Following developments in the formal sector, MOH is also planning to develop risk-pooling schemes in the informal sector.

C. External Assistance to the Sector

38. The Lao PDR is receiving substantial external assistance in the health sector, and such assistance accounted for an estimated 30.4 percent of total health expenditures in 1998. Major funding agencies are the Australian Agency for International Development (AusAid), the European Commission, the Germanische Technische Zusammenarbeit (GTZ), the World Bank and United Nations agencies. Fifteen agencies provide 71 percent of foreign assistance to the health sector and 87 percent of the foreign assistance for PHC. Multilateral assistance contributed about $5.1 million or 37 percent and bilateral assistance about $8.6 million or 63 percent. A list of projects with source of funding, outcome, and lesson learned is in Appendix 3.

39. The first ADB loan to the Lao PDR health sector was the PHC Project in 1995, which installed a PHC network of health centers and district hospitals in Xieng Khouang and Oudomxai provinces. Concurrently, the World Bank funded the Health System Reform and Malaria Control Project in Savannakhet, Xekong, the Xaysomboune Special Zone, and the Boloven Plateau. AusAid is supporting two PHC projects: the Health and Social Development Project in three districts of Phongsali Province and five districts of Houaphan Province, which commenced in 1997; and the Sayaburi PHC Project being implemented through Save the Children Fund Australia, which commenced in 1991. These projects are in the proposed project area and can be considered as successful pilot projects. The GTZ-supported Lao-German Family Health Project in Bolikhamxay Province started in 1996 and has innovative features from which much can be learned. The Swiss Red Cross supports PHC in Louang Phrabang and Médecins Sans Frontières in Bokeo, Champassak, and Xekong provinces. In addition, there are many small NGO managed PHC projects supported by bilateral and other funding agencies that are very diverse in their approach.

40. Support for vertical programs is also substantial. The Expanded Program of Immunization receives financial support from AusAid, the Japanese International Cooperation Agency (JICA), Luxembourg, UNICEF, and WHO. The nationwide malaria control program receives assistance from the European Union, JICA, and the World Bank. UNFPA's Second Country Program will expand reproductive health training throughout the country but the budget is insufficient to supply contraceptives for the whole country. United Nations agencies against AIDS (UNAIDS) supports the HIV/AIDS control program. A consortium, including ADB, GTZ, JICA, the Swedish International Development Cooperation Agency, and the World Bank, assists the Clean Water Program.

41. The various external interests have led to a potpourri of PHC projects with different implementation strategies. Much has been learned from this diversity, including the need to tailor projects to local conditions and population characteristics. The disadvantages are the substantial gaps in coverage, the difficulties in integrating the projects in the network of PHC services, and problems replicating and sustaining these services. In particular monitoring, supply, and accounting systems need to be standardized.

D. Lessons Learned

42. Through its first loan to the Lao PDR health sector, ADB has gained valuable experience. The first ADB project was implemented on time and led to a marked increase in use of health services and in health outcomes in the targeted population. Important lessons learned, along with those gained from partner organizations, include the following.

(i) Expansion of the public health system through subdistrict health centers and training of private sector VHPs significantly increases accessibility to basic health services.

(ii) Construction of health centers in remote and inaccessible areas of the mountainous northern provinces in the Lao PDR is a major undertaking. In consultation with the community, health centers should be placed strategically to maximize accessible for patients, staff, supplies and supervision.

(iii) The success of health centers depends on the Government's ability to deploy competent health personnel from the province or district. A health center should not be constructed until all staff have been assigned. A health center should have three full-time staff, so that two can travel together for outreach activities in the villages.

(iv) Successful PHC projects require a project management structure that decentralizes responsibility and authority from the central level to the provinces where activities are being implemented. It is not possible to successfully manage projects with heavily centralized management and disbursement procedures.

(v) Successful PHC projects depend on the ability to procure civil works, medicines, other supplies, equipment, and consulting services expeditiously. Delays in procurement translate into exponential delays in implementation. Large-scale PHC projects need a procurement unit with competent staff using streamlined procurement procedures to deliver the goods on time.

(vi) Cost recovery for health care goods and services is used widely in the Lao PDR at every level. At provincial hospitals and district hospitals, cost recovery fees account for 60 percent of operating revenue. Every PHC project in the Lao PDR has some form of cost recovery at health centers. In Khammouan and Borikhamxai provinces, village health volunteers are successfully charging for essential drugs. VHPs are also routinely charging for their services.

(vii) Sustainability of PHC projects must be well-planned during project design. Human and financial resources required to sustain the PHC projects must be accurately forecast and proven methods, such as cost recovery, carefully integrated in the design to ensure continued operation.

E. ADB's Sectoral Strategy

43. Within the overarching goal of poverty reduction, ADB's operational strategy for the Lao PDR aims to (i) support sustainable economic growth and investments supporting the local

economy; and (ii) strengthen the policy and institutional framework necessary to convert aggregate income growth into balanced, equitable, and sustainable growth. ADB also gives high priority to women's development and population planning, and improving governance. ADB's assistance in the health sector supports policy reform, institutional development, and provision of PHC to provide equitable services and support human development. ADB's overall health sector policy[15] emphasizes a focus on PHC to increase cost-effectiveness of investments; reach the poor, women, and other vulnerable groups; and improve governance in the sector.

44. During the last four years, ADB has focused on the improvement of PHC in two rural provinces. The PHC project was designed explicitly to pilot test a mechanism for establishing a rural PHC system based on health centers at the subdistrict level staffed and supervised by trained and full-time MOH personnel. During the 1997 country programming mission, the Government indicated that it gave high priority to the development of PHC and, accordingly, ADB's Lao PDR country assistance plan includes the PHC Expansion Project.

45. ADB is supporting the PHC policy and institutional capacity of the Government to ensure that PHC investments are effective, efficient, equitably distributed, and sustainable. ADB plans support to expand the PHC network and referral facilities to rural geographical areas where little or no access to PHC services exist. ADB also plans to support the Government with institutional capacity building for PHC management and to strengthen health sector financing.

F. Policy Dialogue

46. Extensive policy dialogue was held with MOH about making effective and affordable health services available to the entire population. Key policy themes that have been discussed between the ADB Mission and MOH are (i) targeting disadvantaged populations including women and children, the poor and ethnic minorities; (ii) capacity building to improve health sector performance; and (iii) improving financial sustainability and efficiency of public health services.

47. **Targeting Disadvantaged Populations**. Within the context of poverty reduction and the right to health care for all, ADB discussed the Government's approach to make essential health care available to all. The Government is pursuing this through (i) strengthening the policy and strategic framework for PHC, (ii) targeted health services and human resources developments, and (iii) improving affordability of services for the poor.

(i) The development of PHC policy guidelines and an investment plan, and the preparation of provincial plans and budgets will help focus on the needs of the disadvantaged. ADB will support this through a proposed advisory TA. In addition, the Project will support regular evaluation of health services benefits to the poor and ethic minorities.

(ii) MOH will give high priority to placement of health facilities in poor and underserved populations, in particular ethnic minorities, and will give high priority to services benefiting the poor most. MOH and ADB concur on the need to increase indigenous staff and female staff in areas populated by ethnic minorities, to ensure acceptability of services. An ethnic minorities plan was prepared and it was agreed to establish three provincial training programs in the northern area especially for candidate health workers from ethnic minority groups. The programs will become operational within two years of loan effectiveness.

(iii) The Project will support MOH to provide affordable PHC for the poor through the provision of low cost drugs, more accessible services that reduce travel and opportunity costs, and exploration of alternative financing mechanisms. Extensive

[15] ADB. 1999. *Policy for the Health Sector*. Manila: ADB.

dialogue was held on ways to ensure that user charges do not undermine use of services by the poor and ethnic minorities. With the support of the proposed advisory TA and the Project, financial studies will be done to test strategies to improve the subsidy system at both hospitals and health center levels.

48. **Capacity Building**. ADB and MOH discussed the capacity constraints to implementing the new PHC policy and improving the health sector's performance. ADB will assist MOH with advisory TA for capacity building in PHC to build the capacity of the PHC coordination units in the provinces and develop PHC management systems within the next three years. The Project will build provincial and district PHC management capacity, in line with the Government's decision to delegate strategic planning to the provinces and eventually make districts responsible for budgeting and implementation.

49. **Financial Sustainability and Efficiency**. Extensive policy dialogue was held on improving cost-effectiveness, cost containment, and financing in the health sector.

(i) MOH will improve health sector spending by allocating more of the budget to interventions of high cost-effectiveness, in particular preventive and promotive services. The budget for MCH services, including for immunization, safe motherhood, birth spacing and HIV/AIDS education, is low and needs to be increased. This issue has been taken up in the PHC policy of MOH and during the project design, and will be incorporated in the annual provincial health budgets.

(ii) In terms of cost containment, MOH will continue to limit the recruitment of staff in general, but train and recruit ethnic minority staff for ethnic minority populations. MOH is also containing the expansion of the network of health facilities. Extensive mapping is being done to select locations for new health facilities that are in areas with needy populations, that can be properly managed and supervised, and to which excess hospital staff can be posted. Realizing that international standards are not attainable in the short term, the priority is to give households access to health services within half a day's walk, with the option of an overnight stay, at locations that are convenient for patients and staff. To make basic health care more accessible in scattered and small hamlets, MOH will train VHPs and expand outreach services in a phased manner.

(iii) In the next three years, MOH will be exploring various strategies to improve health sector financing with the support of the proposed advisory TA and the Project. The proposed strategies will focus on streamlining cost recovery systems at hospital level, establishing drug revolving funds at the health center and village levels, and developing a provincial risk pooling system for the informal sector in addition to similar efforts in the formal sector.

IV. THE PROPOSED PROJECT

A. Rationale

50. The Lao PDR is one of the poorest countries in the Asian and Pacific Region, with half of the population living in poverty. The rural poor, in particular women and children and ethnic minorities living in the inaccessible northern hills, suffer from extremely poor health. The network of health facilities in the northern provinces has inadequate coverage and provides a limited range of curative services of substandard quality. More than half the rural population do not have access to preventive and promotive services and first referral care in these northern provinces.

51. The Government, as a cornerstone of its social policy, accords high priority to the improvement of the health status of the population. PHC has been identified as the most cost-effective approach to provide basic health services. The Government recently approved a PHC policy that aims to make a basic package of health care available to the entire population, and restructured MOH in support of PHC. The Government has requested ADB to support expansion and improvement of PHC delivery, strengthening of PHC planning and management, and development of effective financing mechanisms. The Government gives high priority to improving the health status of women and children, ethnic minorities, and the rural poor.

52. Several strategies to reach the scattered rural population have been considered, including the construction of many small health centers, the provision of mobile clinics, training of volunteers, training of paid village health workers, and partnership with private VHPs. ADB's first PHC Project demonstrated that, while recognizing the needs of some of the poorest ethnic minorities, it was not feasible and cost-effective to build facilities and employ full-time staff in low-density populations living in remote locations. Instead, the Project will selectively expand the network of public facilities in strategic locations that are both accessible for Government staff and as close to the target population as possible. To increase access to rural villagers in general and ethnic minority populations in particular, the Project will explore partnerships with VHPs. As routine curative care will be shared with VHPs, public resources can then be more equitably allocated to priority interventions and subsidies for the poor. Forming partnerships with private sector providers instead of recruiting paid village health workers also avoids recruiting more health staff, and increases the likelihood of sustaining service delivery.

53. Under the current PHC project, contractual workers were hired to staff new health centers. The disadvantage of this approach is the low quality of these contractual workers, and the additional recurrent cost it imposes. Productivity of health personnel could be increased by redistributing excess personnel to peripheral health centers. However, most health staff depend on additional sources of income to supplement the low Government salary and cannot afford to move to a place where they cannot augment their income. To make redistribution possible on a voluntary basis, transferred staff will be offered incentives and, where needed, a hardship allowance. In all provinces, the population is a patchwork of ethnic groups. For example, 24 ethnic minority groups make up 90 percent of the population in Phongsali Province. However, few health workers are from these ethnic minorities, causing cultural and language barriers in delivering services. The Project will therefore increase the training of ethnic minorities, so that health centers will have at least one staff likely to speak the local language.

54. To ensure that health facilities are being used adequately, the quality of care needs to be improved. An evaluation of beneficiary perceptions[16] revealed that beneficiaries perceive the availability of drugs, the presence of qualified staff, and good contact with health workers as indicators of quality. In one project,[17] use increased by 75 percent in Pakkading district hospital, 51 percent in Pak Ou district hospital, and 46 percent in Paksan provincial hospital when the quality of care improved with the help of revolving drug funds that were making quality drugs available at prices lower than those at private pharmacies.[18] Accordingly, a comprehensive approach will be followed to improve the quality of PHC services, including staff development at all levels, improving supply systems and supervision, and strengthening the role of the provincial hospitals in quality control.

55. The development of an integrated PHC system delivering more comprehensive services requires more capacity at the provincial and district levels than a patchwork of centrally controlled programs and projects. It is therefore necessary to develop a new PHC management structure and management systems and skills in support of PHC. With the expansion of health services, it is also

[16] Chanthala P, Phoutthalath V. *The Community Perceptions about Health Services under the PHC Project in Xieng Khouang and Oudomxai Provinces, Final Report.* MOH. 1998. Vientiane.
[17] Chanemougame Z. *Hôspital Provincial de Paksane, Rapport d'Activités Juin 1992–Mars 1994*. CCL. 1994. Vientiane.
[18] Noel, A. *Revolving Essential Drugs Fund, Supervision and Follow up, First Mission*. Swiss Red Cross. 1996. Vientiane.

necessary to explore ways to rationalize and increase health sector financing and make it more sustainable, while ensuring that PHC remains affordable for the poor.

B. Objectives and Scope

56. The Project will assist the Government to improve the health status and reduce poverty of the rural people of the Lao PDR. The Project objective is to improve PHC coverage for the rural poor by (i) expanding and improving the quality of PHC in the northern region, and (ii) strengthening the institutional capacity for PHC. Provinces in the north were chosen for the first component because of the (i) poor health status, in particular among the ethnic minorities; and (ii) large gaps in the PHC coverage. The second component is nationwide, as the Government wants all provinces to fully participate in and contribute to the nationwide process of planning PHC development and integration of services under the new PHC policy. To do so requires strengthening of the provincial capacity for PHC coordination.

57. The Project will target women and children, ethnic minorities, and the rural poor by (i) increasing their physical, social, and financial access to essential services; (ii) focusing on interventions and diseases that affect them mostly; and (iii) improving the quality of services for these groups. The Project will give priority to cost-effective interventions benefiting women and children including health promotion, MCH and birth spacing services, the prevention and treatment of common infections and micronutrient deficiencies, and first referral services.

1. Component 1: Improving Access to Quality PHC in the northern region

58. The first component will develop PHC in eight provinces in the northern region by (i) increasing access to PHC, (ii) improving the quality of care, (iii) strengthening reproductive health services, and (iv) promoting village health care. The Project will support PHC development at all levels in six provinces, namely Bokeo, Houaphan, Louang Namtha, Oudomxai, Phongsali and Xieng Khouang. In addition, the Project will support the improvement of referral services in these provinces and Louang Phrabang and Sayaburi. The total population of the eight provinces is 1.7 million, about 62 percent of who are poor and 38 percent very poor. [19] Project activities below the provincial level will be limited to 34 out of 61 districts, complementary to the PHC support of other external agencies, with a total population of 0.9 million.

a. Increasing Access to Primary Health Care

59. **Essential Primary Care.** MOH plans to provide comprehensive packages of essential primary care services in all district hospitals and several strategically located health centers in each district (the packages are summarized in Appendix 4). To improve coverage of health services, the Project will construct two type A and 39 type B health centers, and renovate six health centers to fill the gaps in the network of health services in the northern area. The facilities will include staff quarters, overnight accommodation, and water supply if needed. Type B health centers will have three rooms: one for curative care, one for MCH and birth spacing services, and one for overnight accommodation, observation and care. Type A health centers will have six rooms. A total of 57 health centers will be equipped. The health centers will support outreach services including immunization, drug kit supply to VHPs, and training and supervision of health staff and VHPs. The Project will also construct 5 district hospitals, renovate or upgrade 11, and equip 18. In total, 42 district health services will be supported with motorcycles, equipment, and supplies.

60. The expansion of the network of PHC facilities is kept modest to ensure cost-effective provision of health services. The location of new facilities is based on an extensive mapping and consultation exercise that examines population density, location of ethnic minorities, coverage of

[19] Based on the latest analysis of the Lao Expenditure and Consumption Survey of 1997-98 (footnote 6), 59.3 percent of the population in these eight provinces is considered poor and 24.6 percent very poor.

existing facilities, plans for expansion of rural access roads,[20] and consultation with local authorities and beneficiaries. It is closely coordinated with other external assistance projects in these provinces to ensure that there is no overlap in services. Construction of health centers will require an agreement with the local community representatives. Construction will not start until a person of the predominant ethnic minority has started training to become a member of the health staff. The community will, where feasible, contribute labor and materials for the health center and construct staff houses. This contribution is estimated to be up to 18 percent of construction costs.

61. **First Referral Services.** The provinces have an average population of about 250,000, comparable to small districts in many other countries. The provincial hospitals provide first referral services, including basic obstetric and surgical services, and staff training. To improve first referral services, the Project will upgrade Louang Phrabang, Phongsali and Sayaburi hospitals; renovate Bokeo, Houaphan, and Xieng Khouang hospitals; and construct new hospitals in Louang Namtha and Oudomxai because of the deplorable state of their current hospitals. Construction will include facilities for MCH and birth spacing clinics; basic surgical, obstetric, pediatric, and medical inpatient care; laboratory services; and staff training. The Project will also support the expansion of first referral services to seven of the larger district hospitals. These district hospitals will be provided with facilities and equipment for emergency surgical services, including obstetric surgery. The Project will also provide scholarships for postgraduate training of medical officers and nurses in surgery and anesthesia and will establish laboratory services, including blood transfusion services, for the seven hospitals. Telecommunication and ambulance services will be made available in at least nine district hospitals.

b. Improving Quality of Care

62. Delivering quality health care depends on many factors including staff availability, staff skills and motivation, adequacy of equipment and supplies, regular supervision, and competent management. The Project will address several shortfalls to improve the quality of services.

63. **Staff Redistribution**. The plan is to have one medical assistant or nurse and two auxiliary nurses in each health center, including at least one female and one person from the predominant ethnic minority in the area. To compensate for the shortage of staff in health centers, the Project will support redistribution of excess hospital staff who volunteer to go to health centers. To make this possible with low salaries, staff will be provided with incentives to compensate for loss of income, including possibly accommodation, motorcycle or bicycle, training, certificate for good performance, and promotion opportunities. In addition, staff working in remote health centers will receive a hardship allowance. Staff will be transferred back to a hospital if they request for a transfer after two to three years of service in a remote location. Rewards for good performance will be provided in a transparent and objective manner based on reports of supervision visits, patient satisfaction and community evaluation. Staff doing fieldwork and supervision will be provided a small per diem and compensation for transport expenses.

64. **Preservice Training**. To compensate for the shortage of staff from ethnic minorities, the Project will increase the regional training capacity for auxiliary nurses or equivalent staff. Training programs will be established in Louang Phrabang, Oudomxai, and Xieng Khouang. Priority will be given to selecting ethnic minority staff living near health centers. They will sign an agreement with the Government that they will work in the health center near their home for at least five years following completion of training. In return, the Government will agree to employ the ethnic minority persons within three months following successful completion of the training. Civil works for a health center under the Project will not be started until a person from an underrepresented ethnic minority from the catchment area of the health center has been admitted to the training program. Selected ethnic minority persons should have basic education to be eligible for the one-year technical training program. Those with insufficient basic education will be sponsored to obtain preparatory

[20] Including ADB's proposed Lao *Rural Access Road* Project.

general education. The schools in Oudomxai and Xieng Khouang will be upgraded so that all schools have two classrooms and dormitories for a total of 40 people, including for in-service training. The Project will also support the three schools with regional teacher training, allowances for about 240 students, equipment, furniture, and training material.

65. **In-Service Training**. The Project will seek to institutionalize in-service training in the targeted provinces based on the lessons learned from other projects, with the general purpose of making skilled staff available at all levels. The focus will be on general management of services, MCH, birth spacing, management of common infections, and training and support of VHPs. Provincial and district staff will be trained in management, supervision, and clinical care. The training program will be managed by the provincial health offices in collaboration with all external agencies active in the province. Consulting services will be provided to institutionalize the training program. Five provinces will be provided with in-service training facilities, with one classroom and dormitory for 20 people as part of the provincial hospital complex. The indicative training program is in Appendix 5.

66. **Supervision**. The Project will support the provincial team to conduct monthly supervision of district activities, and the district team to supervise health centers monthly, using a supervisory checklist that allows assessment and aggregation of performance of the PHC program and clinical practices. Eight provincial and nine interdistrict teams will be provided a four-wheel drive pick-up vehicle for supervision and supplies. Regional training teams will be supported to ensure continuing education of tutors. Village committees will be provided basic orientation to increase their role in health center management, including monitoring the revolving drug fund and ensuring that the very poor receive services. Quality of care will also be monitored through special studies such as on patient satisfaction and management skills.

67. **Supplies and Cost Recovery**. The Project will provide, for all levels of services, administrative and medical equipment and furniture, medical and office supplies, and demonstration and education materials. For health centers, the Project will provide essential drugs and consumables in kits for treatment of 1,000 people, with adequate stock for at least one year. A cost recovery system based on a revolving fund will be established where not already existing. Additional supplies have been budgeted for subsequent years for poor patients and to compensate for inflation. Drug kits will be resupplied locally with the support of the central office for procurement, logistics, and quality control. The Project will also provide a one-year initial supply of essential drugs and consumables for district hospitals.

c. Strengthening Reproductive Health Services

68. The Project will collaborate with UNFPA in developing reproductive health services in the eight provinces in the northern area. UNFPA will provide training in reproductive health education, antenatal care, the management of normal and complicated delivery, postnatal care, birth spacing, and management of reproductive and urinary tract infections. Reproductive health training will also be incorporated in general in-service training of health staff. The health centers to be constructed will provide examination space for maternal check-up, which can also be used for emergency delivery. Overnight accommodation will be available in the health centers for those patients who cannot return the same day, or need additional observation, care, and referral. In addition to facility-based services, the Project will initially explore in one province the feasibility of mobile reproductive health services, using the provincial hospital team.

69. To support the reproductive health program in the northern area, the Project will purchase contraceptives and other supplies, where applicable using the UNFPA global procurement system. The Project will also provide, on a declining scale, financial support for the operational costs of expanding reproductive health services in the eight targeted provinces as part of the Government counterpart contribution, where not available from other sources. This includes field travel and training costs of staff providing MCH and birth spacing services and procurement of vaccines. To

build up long-term capacity for health services development, the Project will also support four regional fellowships for postgraduate training in reproductive health care.

d. Promoting Village Health Care

70. The Government proposes in its PHC policy to promote village health care, in particular to reach small and isolated communities where it is not cost-effective to place health centers. In view of the basic needs and dispersion of the population, this is a high priority. Good examples of such programs exist. Save the Children Fund Australia, AusAid, GTZ and other agencies are training VHPs in several provinces. The Project will explore whether the Government system has the capacity to support VHPs, and whether VHPs are willing to work with the Government in some form of public-private partnership. The Project will, based on need and demand, seek to improve village-based health education and health care in isolated villages, in particular among remote ethnic minorities not having access to regular services. This will include (i) facilitating support and monitoring of the village committee; (ii) health, nutrition, and birth spacing promotion; (iii) basic health services through VHPs and birth attendants; and (iv) other activities to promote village health. Where possible, this will be done in collaboration with NGOs and other Government services operating in these provinces. Provincial and district teams will be trained in community development, teaching methods, and village health care. The district team, with support from the provincial team, will be responsible for planning, implementing, and monitoring the village health care promotion.

71. **Village Committee Support**. The district health team will select one or two health centers each year to be assisted in the development of village-based health activities. All or a cluster of villages will be selected in the catchment area of the health center. Participation of villages will be on a voluntary basis depending on interest in participation and staff constraints. Priority will be given to poor villages of ethnic minorities not having easy access to health services. Following identification and selection of interested villages, the district PHC team will discuss the options with the village committee and health care providers, and make a social contract for a basic package of needs-based health care activities to be made available and sustained at village level. The village committee will be responsible for overseeing implementation, including identifying health education priorities, monitoring drug prices, and ensuring that the very poor receive adequate care at minimal cost.

72. **VHP Training**. Most villages have at least one health practitioner, who may be a retired health worker, drug dispenser, traditional birth attendant, village health volunteer, or traditional healer. The village committee will seek interested persons among the existing health practitioners or other suitable candidates to provide basic health services and health promotion. Additional skills such as for maternal care may be added after one or two years of satisfactory performance. The VHP should preferably be female, married or otherwise settled, and have the ability to learn. The VHP will have a small income from the sale of drugs. About 1,200 VHPs will undergo phased training for 1-3 months at the health center level. VHPs will be provided a per diem during training. Training will start in Xieng Khouang and Oudomxai provinces, where a health center network and training capacity have been established.

73. **Drug Revolving Fund**. VHPs will provide standard care for 5-10 common illnesses—depending on the training of the provider—such as for malaria and respiratory tract infections. The Project will establish a revolving drug fund by training the VHP and providing an initial supply of drugs. VHPs will be allowed to sell the drugs for a reasonable mark-up and adjustment for inflation. The Government will periodically update guidelines regarding the minimal range of essential drugs to have in stock. The Government will also provide guidelines regarding prices of drugs but will otherwise leave the monitoring of drug prices to the village committee. Proceeds from the sale of drugs will be used to purchase new supplies from approved sources providing quality drugs. The village health committee will be asked to arrange community assistance for families who can not afford to pay for drugs.

74. **Village Health Volunteers**. The Project will also support health education efforts to improve the village environment based on local priorities. About 5,000 volunteers will be identified and trained at the health center to promote health on such topics as personal hygiene, clean water and sanitation, immunization, nutrition, reproductive health, use of mosquito nets, drug addiction, use of health services, and timely referral. The Project will support small-scale water supply and sanitation if technical support can be obtained and no other funding source is available.

2. Component 2: Institutional Capacity Building for PHC

75. The Project will strengthen MOH's capacity to develop PHC in accordance with the PHC policy. The Project will support MOH to better coordinate PHC delivered through vertical programs; projects funded by external agencies; and services offered at the district hospitals, health centers, and village levels. This will be done by strengthening the national and provincial organizational structures established by MOH. The Project will support MOH to (i) develop PHC coordination structures, (ii) strengthen PHC management systems, (iii) build capacity through staff development, and (iv) test innovative financing approaches. The Project will closely coordinate activities with other externally assistance projects in the provinces to ensure complementarity.

a. Strengthening PHC Coordination

76. The Project will provide resources to activate the PHC coordination network at the central, provincial, and district levels. The MOH PHC policy mandates the PHC and Rural Development Division and 18 provincial PHC coordination units in the provincial health service. The division has been established in the Cabinet under the supervision of the MOH steering committee. A director has been assigned and staff appointments are forthcoming. The division is responsible for planning, coordinating, supervising, monitoring, and evaluating all PHC activities and for coordinating international assistance for the PHC program. The Project will assist the start-up of the central PHC and Rural Development Division by providing support for (i) contracted staff; (ii) facilities, equipment, furniture, and vehicles; (iii) meetings and workshops; (iv) supervision of PHC activities in the provinces; (v) a PHC research agenda; and (vi) routine operating costs.

77. The Government plans to establish provincial PHC coordination units in the provincial health offices to better coordinate PHC activities in the provinces. These units will be established within one year after the commencement of the loan. The Project will assist with the formation and activation of 18 provincial PHC coordination units by providing for (i) construction or renovation of modest office space in eight provinces; (ii) office equipment and furniture, vehicles, and communications equipment; (iii) annual planning meetings; and (iv) routine operating costs. Following staff training, MOH will provide these units with the authority to effectively coordinate services, projects, and vertical programs delivered under other organizational entities in MOH.

78. The PHC coordination network will also contain the project management structure for the Project (Appendix 6). The project management office (PMO) will be located in the PHC and Rural Development Division, MOH. The project implementation offices (PIOs) will be located in the provincial health offices in eight provinces under component 1 of the Project. The PMO and PIOs will be provided facilities, equipment, vehicles, and staff to handle PHC program management and project implementation. PMO and PIOs will assist provinces to develop five-year health plans and annual plans for the provinces for aggregation at national level. These plans will include all major vertical program and project activities of external agencies.

b. Standardizing PHC Management System

79. To complement the nationwide network for PHC coordination, the Project will assist MOH to adapt standardized management systems that can be used in all PHC activities throughout the country regardless of the source of funding. A multitude of management systems are currently

being used by projects, programs, and services, which makes it difficult to develop, coordinate, and monitor PHC. The MOH PHC and Rural Development Division, in collaboration with other divisions in MOH, will review and evaluate management systems used in the services, programs, and projects for relevance, utility, and ease of implementation. These will be developed into coherent system designs, standard operating procedures, and guidelines that will be tested and disseminated nationwide in coordination with other divisions and external agencies.

80. Priority will be given to management systems for (i) planning and budgeting, (ii) financial management, (iii) office procedures, (iv) supervision, and (v) monitoring and evaluation. Improved planning and budgeting helps to identify priorities, rationalize spending, set milestones, and conform to the Lao PDR Government fiscal year that integrates plans and budgets from Government and external assistance. Cost recovery needs streamlining, with clear guidelines for pricing drugs and services and for any subsidy. Clear guidelines are needed for office operations such as information storage, communications, and reporting. Supervision of PHC will use simple checklists for supervising PHC programs at all levels. The current health information system needs to be standardized and simplified as it is fragmented, replicates information collection, and collects information of limited use and validity. PHC will be evaluated using uniform indicators and standardized methodologies so that performance can be evaluated among provinces and projects.

81. Consultants for management and monitoring will be hired to work with MOH personnel to develop the standardized systems. They will implement the systems that will be designed under the proposed advisory TA for capacity building for PHC. Proposed systems will be reviewed and modified in national workshops with participation from each province and funding agencies. The Project will provide follow-up and on-the-job training once staff have received basic training and the systems have been introduced. The Project will also assist MOH's Human Resources Department to (i) disseminate organizational and personnel guidelines that were developed based on analyses conducted under the Civil Service Reform Program, and (ii) monitor their implementation.

c. Staff Development for PHC Management

82. The Project will improve management capacity among central and provincial PHC staff through a series of in-country training programs and study tours; annual conferences on PHC; workshops, regional, and international study tours and conferences; and overseas fellowships for degree-level training fields related to public health management. The Project will support (i) a PHC management course for provincial and district health office staff, (ii) a WHO hospital management course to train hospital staff in hospital finance and management, and (iii) an accounting and cost recovery course for health center staff. These courses will be offered at the central MOH training centers (School for Health Personnel, School of Public Health, or central tertiary hospitals) or at regional training centers or PHC referral facilities (Appendix 5).

83. The in-country, regional, and international study tours and conferences will expose managers to innovative management practices in other provinces and countries and allow them to exchange experiences. Based on a set of criteria agreed between MOH and ADB, the Project will support (i) 11 people to obtain masters degrees in public health in the region; and (ii) 4 with fellowships to attend overseas graduate-level programs abroad in public planning and finance, and human resource development. English language training will also be offered to planning staff.

84. A PHC conference will be held once every two years so that provincial governors and health staff can discuss policy issues, and review performance of all provinces using standard indicators for supervision and evaluation. These will be held in conjunction with the annual planning meetings. The training courses to be offered are PHC and hospital management, cost recovery guidelines and methods, fellowships, language courses, and local and international study tours and conferences.

d. Testing Innovative Financing Approaches

85. The Project will test three strategies to improve PHC financing. The Project will explore (i) streamlining cost recovery for hospital services, (ii) a revolving drug fund for health centers and at village-level, and (iii) a provincial health care subscription system. Each of these reforms derives from and is designed to build on the success of cost recovery efforts in the public PHC network. Where risk pooling is introduced, patients will have the option of either fee-for-service or annual prepayment of a subscription fee with a substantial discount on fee-for-service. The options will be carefully evaluated for possible replication nationwide. MOH will actively pursue a change in policy to abolish the 20 percent tax levied on user charges. at present in all provinces with a detailed provincial health budget, and where a pilot project for health sector financing is being introduced.

86. The Project will streamline cost recovery systems in hospitals. The proposed advisory TA will develop the design for a hospital study funded under the Project to determine the sources and uses of funds to improve budgeting, allocation of funds, and pricing of services. The study will (i) consider mechanisms to subsidize services for the poor and services with externalities; (ii) determine whether provision of reduced fees for the poor should continue on the basis of an informal assessment and exemption system or whether it should be replaced with a more transparent system, involving higher overheads; and (iii) explore the possibilities of paying for staff incentives and operational expenses.

87. To improve access to drugs in more remote communities, the Project will explore whether a revolving drug fund can be established at the village level. VHPs will be provided with an initial supply of drugs for common illnesses. The VHP will be allowed a mark-up to pay for full replacement of used stock and additional cost of service delivery and inflation. VHPs will periodically be provided with guidelines for drug prices. The Project will also test whether preventive and promotive services, such as for immunization, can be included in the VHP support package. Different options will be explored to make drugs affordable for the very poor. The most promising option is to make an agreement with the community organization to arrange for assistance for the very poor as a condition for assistance. Other options under consideration are a postpayment system, an annual Government supplement for the VHP, and a voucher system.

88. Based on a design developed under the proposed advisory TA, the Project will explore the possibility of establishing a provincial health care subscription system in Louang Phrabang using an annual subscription fee to introduce risk pooling against catastrophic illness, promote quality of care and preventive services, and increase health sector financing. Complementary to the developments in the formal sector, this scheme will test the possibility of people contributing to a provincial public health fund to obtain services at a discounted rate in the provincial health system. Free health cards will be issued to the very poor. Collected fees will be redistributed according to use of services. The study will include the design of accounting and outcome monitor systems.

C. Cost Estimates

89. The total cost of the Project including physical and price contingencies, and taxes and duties is estimated at $25 million equivalent, comprising a foreign exchange cost of $10.7 million equivalent (43 percent) and local currency cost of $14.3 million equivalent (57 percent). Table 1 summarizes the cost estimates and Appendix 6 gives the estimates.

Table 1: Project Cost Estimates
($ '000)

Components	Foreign Exchange	Local Currency	Total Cost
A. Base Cost			
1. Component 1: Improving Access to Quality PHC in the northern region			
a. Increasing Access to PHC	2,321	3,572	5,893
b. Improving Quality of PHC	2,670	2,545	5,215
c. Strengthening Reproductive Health Services	918	852	1,770
d. Promoting Village Health Care	1,037	1,245	2,282
2. Component 2: Building Institutional Capacity for PHC			
a. Strengthening PHC Coordination	760	888	1,648
b. Standardizing PHC Management Systems	857	1,467	2,324
c. Staff Development	127	508	635
d. Testing Innovative Financing Options	199	316	515
3. Duties and Taxes[a]	0	1,139	1,139
Subtotal (A)	**8,889**	**12,532**	**21,421**
B. Contingencies			
1. Physical[b]	578	772	1,350
2. Price[c]	591	972	1,563
Subtotal (B)	**1,169**	**1,744**	**2,913**
C. Interest on Loan	**666**	**0**	**666**
Total	**10,724**	**14,276**	**25,000**
Percent	43	57	100

[a] Estimated at 10 percent of local cost.
[b] Estimated at 8 percent for civil works and medical equipment; 5 percent for office equipment and transport; 3 percent for drugs and supplies; 2 percent for training, consulting, and research services; and 10 percent for land acquisition and operations and maintenance.
[c] Estimated at an annual factor of 2.4 percent of both foreign and local project costs in dollar terms.
Source: Staff estimates.

D. Financing Plan

90. It is proposed that ADB provide a loan of SDR14,956,000 ($20 million equivalent) from its Special Funds resources to finance up to 80 percent of the total project cost. This will cover the total foreign exchange cost and an estimated $9.3 million equivalent in local currency costs (65 percent of the total local currency cost). The term of the proposed loan will be 32 years, including a grace period of 8 years, with an interest charge of 1.0 percent per annum during the grace period and 1.5 percent per annum thereafter. The Government will finance $5.0 million equivalent of the project cost. The Government contribution for civil works and recurrent costs to sustain project activities after project completion will in part be financed from the eight provincial budgets. The Government financing includes a community contribution for labor and building materials valued at $0.2 million and land valued at $1.3 million for the plots of new health facilities. An annual financing plan is in Appendix 7.

Table 2: Financing Plan

($ million)

Source	Foreign Exchange	Local Currency	Total Cost	Percent
ADB	10.7	9.3	20.0	80
Government and communities	0.0	5.0	5.0	20
Total	**10.7**	**14.3**	**25.0**	**100**

Source: Staff estimates.

91. The provision of financing for local currency cost is considered justified under ADB's local currency financing policy.[21] Assistance is required to meet the local currency cost of development projects because a low level of per capita income constrains national savings and public finance is under pressure. The Government is taking steps to improve the rate of national savings by enhancing revenue collections, improving the efficiency of public expenditure and incentives for private sector participation in revenue-generating capital market reforms, and encouraging private sector participation in revenue-generating public sector projects. Although these efforts are expected to increase national savings, a significant resource gap will continue for some time because of the need for large capital investments. Thus, ADB assistance for local currency expenditures related to the Project from an economic perspective is justified.

92. From a technical perspective, the high level of financing of local currency costs is justified for a number of reasons. First, PHC services to be provided under the Project are of disproportionate benefit to the poor but involve few foreign exchange costs. Second, many of the inputs required for PHC services are local, and thus the foreign exchange cost is modest. Third, the Project supports interaction of the Government with the private sector at the village level through partnerships with village health providers, and the nature of the support is aimed at providing services at the grassroots level with locally procured goods and services.

E. Implementation Arrangements

1. Project Management

93. MOH will be the Executing Agency for the Project (para. 106). The steering committee for the Project will be the MOH Steering Committee for Monitoring International Assistance, composed of the Minister, Vice-Ministers, and directors of the departments in MOH, with representation of the Ministry of Finance, the State Planning Committee, and the Committee for Investment and Cooperation. The PMO (para. 78) will have two project coordinators, four assistant project coordinators, three accounts assistants, administrative and statistical staff, and support staff.

94. Each of the eight provinces will have a provincial health steering committee headed by the vice-governor with representation of the provincial health office, the planning and budgeting department, and beneficiaries. PIOs will be established in the provincial health offices of the eight project provinces. The deputy provincial health officer or another person of comparable authority will be the PIO head and project coordinator for the province. The PIOs will have about five additional staff members, including an accounts assistant. The central and provincial steering committees will provide policy support and guidance for project implementation based on the overall strategic framework for PHC development. The committees will institutionalize the use of five-year plans and annual rolling plans, conduct annual reviews, and approve annual project implementation plans and budgets.

[21] R1-95: *A Review of Lending Foreign Exchange for Local Currency Expenditure on Projects.* 3 January 1995.

95. The director of the PHC and Rural Development Division, who will also be the project director, will assist the provincial health offices to prepare five-year plans and annual rolling plans for PHC, and aggregate these to prepare the national five-year plan for PHC and annual rolling plan for approval of MOH. These plans will include the major sources of external financing for the various PHC activities for each province. The director will also (i) coordinate PHC management and services; (ii) coordinate the various PHC projects; (iii) monitor and evaluate PHC development, and (iv) identify studies, policy development, and capacity building needed to support PHC development. The project coordinators in the PMO and the provincial PIOs will report to the project director and will be responsible for project management and implementation.

96. The PMO will be responsible for overall project planning, implementation, and monitoring, including procurement of equipment and civil works, recruitment of consultants, disbursement of funds according to the approved annual implementation plan, reporting, and benefit monitoring and evaluation. PIOs will assist each provincial health office (and PHC coordination unit following its establishment) to plan, implement, and monitor delegated project activities (such as training and local procurement). PIOs will prepare five-year plans and annual rolling plans for the Project as part of the five-year provincial health plan.

2. Implementation Schedule

97. The Project will be implemented over a period of six years, from the end of 2000 to the end of 2006. An implementation schedule is in Appendix 8.

3. Procurement of Goods and Services

98. All procurement for the ADB-financed portions of the Project will be in accordance with ADB's *Guidelines for Procurement.* The PMO will be responsible for procurement under the guidance and supervision of the MOH steering committee. The PMO will set up a procurement unit in PMO and will be assisted by procurement consultants. The PMO will (i) propose bid packages and procurement methods; (ii) prepare detailed materials lists and specifications; (iii) where applicable, determine prequalification criteria, evaluation criteria, and completion of delivery periods; and (iv) evaluate bids, determine the lowest evaluated and substantially responsive bids, and certify payments. MOH will approve contracts and certify payments. Copies of all contracts and supporting documents will be forwarded to ADB for record and where necessary for approval.

a. Civil Works

99. The Project includes construction of small hospitals and health centers, which are in remote and scattered locations and are unlikely to attract international bidders. Civil works contracts will be awarded according to local competitive bidding procedures acceptable to ADB. However, if any package is estimated to cost more than $1.0 million, international competitive bidding procedures will be followed. A domestic firm under supervision of an international architect consultant will prepare the plans for civil works. A summary of civil works is in Appendix 9.

b. Equipment and Materials

100. Under the Project, related equipment and material will be combined into packages to simplify procurement. Supply contracts costing more than $500,000 will be procured by international competitive bidding procedures. Supply contracts of $500,000 equivalent or less will follow international shopping procedures, except for some equipment and supplies such as hostel beds and furniture, which are locally manufactured and unlikely to attract foreign suppliers. These will be procured through local competitive bidding in accordance with Government procedures acceptable to ADB. Packages of less than $100,000 may be directly purchased. Equipment and materials required at the provincial level and costing less than $10,000 may be procured by the

PIO according to Government procedures acceptable to ADB. The indicative list of equipment, drugs, and supplies to be procured is in Appendix 10.

c. Consulting Services

101. The Project will support about 72 person-months of international and about 492 person-months of domestic consulting services. International consultants will include a chief technical adviser (36 person-months), an education and training specialist (6 person-months), a management specialist (12 person-months), a health sector financing specialist (6 person-months), a procurement specialist (6 person-months), and an architect (6 person-months), all based in PMO in Vientiane.[22] Domestic individual consultants will include an education and training specialist (72 person-months), a management specialist (72 person-months), a health sector financing specialist (72 person-months), a procurement specialist (72 person-months), an accountant (72 person-months), and a monitoring and evaluation specialist (72 person-months). A domestic architectural firm will be contracted for five years for building design and construction supervision of health facilities. International and domestic consultants will be selected and engaged in accordance with ADB's *Guidelines on the Use of Consultants* and other procedures acceptable to ADB on the recruitment of domestic consultants. The terms of reference are in Appendix 11.

4. Accounts and Auditing

102. The Government, acting through MOH, will maintain records and accounts adequate to identify goods and services financed from the proceeds of the loan. The provincial health offices will also maintain accounts for relevant project activities following the same standards. In coordination with other TA, the Government will hire a local consultant to bring the Project accounting system up to international accounting standards in the first year.[23] MOH will (i) maintain separate accounts for the Project; (ii) ensure that accounts and financial statements are audited in accordance with international auditing standards by auditors acceptable to ADB; and (iii) provide ADB, not later than 12 months after the close of each fiscal year, certified copies of audited accounts and financial statements and the report of the auditor on these. In addition to the internal control arrangements of the department and annual audits of the Government, ADB may request the Government to arrange for an independent audit, either local or international, to be financed from loan proceeds.

5. Disbursement Procedures

103. To expedite project implementation, ADB will deposit an initial amount not exceeding $500,000 into an imprest account with the Bank of Lao under the authority of the Ministry of Finance. The imprest account will be established, managed, replenished, and liquidated in accordance with ADB's *Loan Disbursement Handbook* of June 1996, as amended, and with detailed arrangements agreed upon by the Government and ADB. The statement of expenditure procedure may be used for reimbursements of eligible local and foreign expenditures under the Project not exceeding $100,000 and to liquidate advances made into the imprest accounts in accordance with the same guidelines. Expenditures for contracts larger than $100,000 equivalent should use the direct payment and commitment letter procedures for withdrawing loan funds. Because project activities will take place in dispersed geographic areas where communication is difficult, simple mechanisms are required to disburse small funds quickly through decentralized decision making while maintaining acceptable levels of financial control. Accordingly, subaccounts will be established and managed in the PMO and in the eight provincial PIOs following the same guidelines. The initial amount in PMO will not exceed $50,000 and in PIOs will not exceed $10,000.

---

[22] AusAid is considering supporting reputed international NGOs to provide TA to facilitate capacity building and development of PHC at the provincial level.

[23] TA 3309-LAO: *Enhancing Government's Accounting Regulation and Facilities,* for $700,000, approved on 25 Nov 99; TA 5799: *Social Impact Assessment of the Financial Crisis in Selected DMCs* for $500,000, approved on 22 July 98.

6. Reporting

104. The PMO will prepare the Project's annual plans for ADB's concurrence. The PMO will also prepare quarterly monitoring reports, and submit them to ADB within one month of the end of each quarter. The reports will include (i) progress made including aspects of quality; (ii) delays and problems encountered, and actions taken to resolve the issues; (iii) compliance with loan covenants; (iv) proposed program of activities and inputs required during the next three months, and (v) maintenance and repairs. Each PIO will report to PMO. Within six months of physical completion of the Project, the Government will submit to ADB a project completion report. The report will include the costs and compliance with loan covenants.

7. Midterm Review of the Project

105. In addition to regular reviews, the Government and ADB will jointly undertake a midterm review of the Project after three years of implementation. This will be preceded by an MOH report describing the project progress and issues, a midterm household survey in two of the selected provinces, and group discussions with health staff and potential beneficiaries. These will indicate the progress toward quantitative and qualitative targets, and likely project impact and sustainability. The midterm review will appraise the project scope, cost estimates, implementation arrangements, and compliance with loan covenants and assurances, and identify any issues to be addressed to improve project impact and sustainability. The Government and ADB will jointly decide on any changes needed in the design and implementation of the Project.

F. Executing Agency

106. MOH has gained experience with project implementation in the first ADB loan to the Lao PDR health sector, which will be completed on schedule and has generally achieved its objectives. The Ministry of Finance will delegate the necessary financial authority to MOH in view of the strong performance of MOH as an executing agency. To address procurement constraints, a procurement unit will be established in MOH. As with other projects in the Lao PDR, successful implementation will depend on the timely availability and quality of project staff, and MOH will ensure that competent administrative and technical project staff are available for the Project during implementation. ADB will assist in capacity building for PHC through a proposed advisory TA. The Project itself provides for substantial international and domestic consulting services to assist in Project implementation.

G. Environmental and Social Measures

1. Environment

107. The Project will have minimal adverse environmental impacts. The Project will support the removal and disposal of asbestos roofing material from Louang Phrabang hospital according to WHO standards. The Government will ensure that proper waste disposal is included in the design of health facilities. Refuse handling and disposal measures for hazardous medical waste, e.g., syringes and needles, will be specifically addressed in the design and operation of the health facilities. The Project will provide training and guidelines for provincial and district health office staff to ensure proper medical waste management in all health facilities under their responsibility.

2. Land Acquisition and Resettlement

108. The Project does not envisage land acquisition or relocation of households, as all construction is expected to be on Government land. Land for hospital construction is already available, and very little land is required for new health centers, which need about 0.25 hectare each. Any negative impacts such as involuntary resettlement will be avoided or minimized in the Project. The Government has assured ADB that no health centers to be constructed under this

Project will involve resettlement of any people. Before any construction is started, the Government will confirm that the plot for construction is Government property and not under lease or otherwise in private use. However, if involuntary resettlement is unavoidable and involves minor land acquisition, relocation, or loss of other assets (e.g., crops), appropriate compensation will be negotiated with representation of the affected persons, in accordance with the Government's and ADB's policies, and will be implemented accordingly. If a health center needs to be relocated, the same assurance will apply. A short resettlement and land acquisition plan has been prepared in case of involuntary resettlement under the Project.

3. Social Analysis

a. Poverty

109. Based on the ADB analysis of the 1997-98 Lao Expenditure and Consumption Survey, about 47 percent of the population are poor and 25 percent are very poor; in the northern provinces about 62 percent are poor and 38 percent are very poor. The very poor are those with a lower consumption equivalent than the cost of a basic food package. In particular, this includes single parents, parents with many young children, and families with chronically ill or disabled persons and drug addicts. For poor families, any loss of labor leads systematically to the reduction of the family's production capacity and, consequently, food shortage and impoverishment. The very poor are not primarily determined by location and ethnic group, but by the socioeconomic conditions of the household. Thus, very poor families may be found in any village and this must be taken into account in planning and financing health care.

110. The Project will directly address poverty by (i) operating in areas mainly populated by poor ethnic minorities; (ii) focusing on the provision of basic services at the village level where the poor are more likely to capture the benefits of Government subsidies; (iii) selectively investing in services that directly support PHC; (iv) addressing diseases such as diarrhea, micronutrient deficiencies, and malaria, which disproportionately affect the poor; and (v) identifying, setting targets, and monitoring the Project's impact on the very poor through village committees and surveys. It is expected that 75 percent of the project beneficiaries will be poor or very poor.

111. The Project will also seek to increase equity by (i) making cost recovery more transparent, efficient and equitable in hospitals, (ii) introducing a revolving drug fund at village level with arrangements to make health care affordable for the poor, (iii) testing risk pooling through a pilot prepayment system, (iv) retaining revenue from cost recovery for improving the affordability, efficiency and quality of services, (v) increasing the role of communities in assisting the very poor, and (vi) targeting a larger share of Government resources for services to benefit the poor.

b. Ethnic Minorities

112. Ethnic minorities constitute about 34 percent of the population overall and 60 percent of the population in the northern provinces. The first component of the Project, because of its focus on access, will mainly be targeting ethnic minorities. The Project will locate facilities near underserved ethnic minorities, provide scholarships for training of auxiliary nurses or equivalent staff belonging to ethnic minorities, post at least one person speaking the local language in each health facility, and increase outreach services and support VHPs in remote ethnic minority villages. Studies are being conducted to determine if there are specific cultural perceptions regarding health and health services that inhibit adequate levels of health care among minorities.[24] Affordability problems exist in most ethnic communities, although the coping mechanisms vary. To overcome the cash flow problem for medical care, a postpayment system is being tested by a GTZ-supported project and may become available for replication. However, informal postpayment systems already exist, and

[24] TA 5794-REG: *Study of Health and Education Needs of Ethnic Minorities in the Greater Mekong Region,* for $800,000, approved on 30 Jun 98.

could be facilitated by providing subsidized drugs. Adequate stocks of drugs should be provided to remote ethnic communities before the rainy season, when access deteriorates. Each province will identify priorities for ethnic minorities and incorporate these in the provincial project implementation plan. The social analysis and ethnic minorities strategy are in Appendix 12.

c. Gender

113. The TA identified major issues concerning women's health knowledge, immunization, use of services, health behavior, and literacy rates. The Project will address women's health through specific targeted services such as prenatal care, obstetrical care, birth spacing, and treatment of obstetrical complications and reproductive tract infections. Family health improvements resulting from the Project are expected to benefit women by reducing the time spent caring for family members. Also, the Project will endeavor to select women as VHPs, volunteers, and trainees to become a health staff. Very few women from some ethnic minorities have basic education, and scholarships will be available to provide them with additional basic education before technical training. Health centers have been designed to provide privacy for women during examination and treatment, and gender issues will be incorporated in the training courses. Women's use of health services will be monitored with specific indicators. The project management will also seek to appoint female staff.

d. Stakeholder Participation

114. Stakeholders were extensively consulted and involved during the preparation of the Project. Results of group discussions with beneficiaries in catchment areas of the first ADB health sector loan in the Lao PDR were used in the project design. This information was supplemented with a household survey in 11 provinces, which provided data on health service availability, health seeking behaviors, and financing of health events. Major PHC projects in the country were reviewed in detail and discussions were held with external funding agency representatives concerning project management issues, supervision, project evaluation, and lessons learned. An MOH team visited the provinces where the Project will be implemented, consulted with local officials, and conducted a detailed needs assessment. Finally, MOH provided substantial guidance for the project design through the MOH steering committee and otherwise.

115. During implementation of the Project, the beneficiaries will participate in four ways: (i) in the selection of sites and the construction of health centers; (ii) in identifying and following up priorities for village health care and promotion; (iii) in selecting and monitoring VHPs and volunteers; and (iv) in making arrangements for health care for the very poor. Project evaluation will obtain the views of beneficiaries through focus group discussions and surveys.

e. Benefit Monitoring and Evaluation

116. Benefit monitoring and evaluation (BME) will play an important role in the success of the Project by helping it to remain focused on achievable goals and monitor progress. In keeping with ADB's *Handbook on BME*, the Project has (i) collected benchmarks, (ii) planned additional studies for analysis and to obtain beneficiary perceptions, (iii) selected a short list of verifiable indicators for monitoring and evaluation, and (iv) planned surveys for impact assessment. A summary is in Appendix 13.

117. A set of indicators has been selected to evaluate achievements of the Project. Those indicators will be collected through health facility surveys, village surveys, and households surveys carried out on a scale large enough to allow provincial comparison. The household surveys will include two nonproject provinces for comparison. Key indicators will be disaggregated by a wealth index to determine whether project benefits are reaching the poor. The chief technical adviser and a domestic monitoring and evaluation consultant will supervise project evaluation. Data collection

will be carried out by the implementing agency, and analysis and reporting will be the responsibility of the consultants.

118. Routine monitoring and supervision will use a standardized health information system that will be developed under the Project for use in all PHC projects in the Lao PDR. The information system will track project inputs and service processes and outputs, aggregated by district. The supervision system will track performance and quality of service at all levels using a standardized checklist of indicators. Client satisfaction will be monitored through surveys, supervision visits, and group discussions. The PMO will have overall responsibility for data collection, analysis, and reporting to all interested parties, including ADB.

V. PROJECT JUSTIFICATION

A. Financial and Economic Analysis

119. The economic rationale for public intervention in PHC service is strong: public intervention provides substantial externalities, compensates for market failure by informational imperfection, allows risk pooling, and provides a safety net for the poor. Many studies, including a 1993 World Bank study[25], confirm a significant positive relationship between health status and economic productivity. Improvements in the health status of the poor will increase their incomes by improving the productivity of workers, reducing the occurrence of catastrophic illnesses that leave them destitute, and allowing children to learn more and thereby enjoy higher productivity and future earnings.

120. The Project is expected to contribute significantly to poverty reduction. The targeted provinces have the high poverty incidence of 62 percent compared with the national average of 47 percent, and ethnic minorities comprise 60 percent of the population in these provinces. Furthermore, the Project is likely to benefit the poor more than this number indicates, because the poor are more prone to common communicable diseases and use services as much as others. While the Project will service all segments of the population in the project provinces, the poor are expected to receive a high proportion of the benefits by reducing their cost for health services and benefiting most from these services. Within the targeted populations, the Project will mostly benefit women and children, who suffer most from disease and malnutrition. The Project will focus on services that benefit women and children, in particular reproductive health services including birth spacing. Reproductive health services help to improve survival of mothers and children; reduce poverty; and improve nutrition, learning capacity, and educational opportunities for children.

121. The Project will improve the efficiency of PHC service delivery in rural areas of the Lao PDR by (i) rationalizing the spatial distribution of staff and physical facilities, (ii) providing services that are either public goods or have large positive externalities, (iii) enabling partnership at the grassroots level with VHPs, and (iv) focusing resources on expansion of the PHC network to include cost-effective interventions for reducing morbidity and mortality. Cost-effectiveness analysis indicates that the cost per disability adjusted life year (DALY) [26] saved is $21 following a favorable scenario, and $48 following an unfavorable scenario. This is well within the range of $75 per DALY saved for priority interventions listed in ADB's *Policy for the Health Sector*. See Appendix 14 for details.

122. Expanding access and introducing new facilities and services under the Project raises the issue of whether these developments can be financially sustained after the Project is completed. Upon completion of the physical investments, the average annual recurrent expenditure needed to sustain the Project activities is estimated at $245,500, to (i) maintain buildings, equipment, and

[25] World Bank. Lao PDR Social Development Assessment Strategy, Report No. 13992-LA. 1995. Washington DC.

[26] The DALY is a composite index of the years of healthy life lost due to morbidity, mortality and disability, and the benefits that can be achieved by saving lost years.

vehicles; and (ii) supervise health care workers at rural health units and VHPs. This amount is estimated to be about 8 percent of the annual Government recurrent expenditure on the health sector. Given the overall significance of externally assisted projects in health sector investments in the Lao PDR, the overall prospect for sustainability is favorable. Also MOH has committed to allocate more budget to promotive and preventive services, although the risk of macroeconomic instability will be beyond the control of MOH. The provincial governments have agreed to contribute financially to the Project, in particular for civil works construction and maintenance, and recurrent costs of MCH services. Because some provinces will have difficulty generating the required financial inflows through cost recovery efforts, the central MOH will have to reallocate budgetary resources among the provinces.

123. The Project employs specific mechanisms to increase financial sustainability: (i) increased revenue from cost recovery from those who can afford to pay for the services, through more accurate pricing of services based on total costs of goods and service provision; (ii) increased cost recovery from more accurate replacement cost pricing to keep up with inflation for drugs and other medical consumables; (iii) partnerships with VHPs for revolving funds with full replacement cost pricing for those who can afford the payment; (iv) increased cost recovery revenue from the pricing of hospital services that currently are not routinely charged to patients; (v) increased retention of cost recovery revenue by exempting the public health sector revenue from taxes; (vi) increased revenue from a provincial subscription system; and (vii) Government assurances that public health subsidies will not decrease in real terms in the future.

B. Environment

124. The Project will have a beneficial environmental impact through its contribution to reducing rural population growth by reducing the number of people depending on slash-and-burn cultivation and exploitation of the forest. Health education on sanitation and waste disposal is also expected to improve living conditions, reduce pests, and contain the spread of common diseases such as malaria.

C. Social Dimensions and Poverty Impact

125. Over 85 percent of the Lao PDR population resides in the rural areas, with 90 percent of income-earning adults depending on agriculture for their livelihood. According to the social analysis done during the TA, most families in the villages in the project provinces in the north are poor subsistence farmers, who live below or near the poverty line. They depend on subsistence farming for their survival, which in turn depends heavily on the availability of a healthy labor force in the family. Any serious disease or death in the family may throw the family into deep poverty. Half of women in the project provinces in the north could not read and that there are periodic food shortages. Access to basic amenities is low in the Lao PDR, with only 49 percent of the rural population having access to clean water, 32 percent having access to latrines, and 28 percent of households have electricity for lighting (footnote 9).

126. The TA household survey found that the average total monthly household expenditure for health care is about KN33,000, or about KN400,000 per year. On an annual per capita basis, this amount represents about $7.50 per person per year, or 2.5 percent of the total annual per capita expenditures, which suggests that health care is affordable for most families if there are no catastrophic illnesses in the family. Improved health and better access to PHC services will reduce these direct expenditures on health care, decrease the indirect costs associated with seeking health care, decrease workdays lost due to disease, and increase productivity. Savings in household expenditures will help reduce food shortages and impoverishment.

127. The Project will improve primary care of about 0.9 million people in 34 districts and improve referral services for 1.7 million people living in the eight northern provinces by helping to provide PHC consisting of proven high impact, cost-effective services. The interventions will benefit mostly

the poor, women, children, and ethnic minorities by easing their large burdens of disease. Based on the DALY lost due to mortality, morbidity, and disability, the Project will reduce more than 30 percent of the burden of disease for women and children. For example, the Project will address (i) maternal emergency conditions such as hemorrhage, sepsis, and obstructed labor; and (ii) facilitate immunizations for childhood diseases and treatment of malaria and acute respiratory infections, and thereby have a significant impact on MCH status. The Project will protect children during a vulnerable time in their lives, thus improving their intellectual and psychomotor development and consequently increasing the returns to investments in education. In addition, the Project will address problems that affect the health status of all members of the population, such as diarrhea, respiratory infections, malaria, and sexually transmitted diseases. Improved health status of the adult working population from these interventions will lead to increased productivity.

D. Institutional Sustainability

128. Many agencies and NGOs are conducting a wide variety of PHC activities at every level of the network. The Project will build capacity at the central, provincial, and district levels to plan, coordinate and monitor PHC activities. The Project will also support planning for further expansion of the PHC network, in accordance with the PHC policy guidelines, strategic framework, and investment to be developed with the help of the proposed advisory TA for Capacity Building for PHC.

129. The Project will train managerial staff in financial management, procurement, and international accounting standards; help set up a PHC coordination unit in each province to focus on key issues such as planning and budgeting, in-service training, and supervision and integration of PHC services; and standardize management procedures and systems to improve efficiency and coordination of the PHC network at all levels. The assistance to PHC coordination includes (i) office renovation and equipment, information systems, and vehicles for supervision of PHC activities; (ii) standardization and implementation of PHC management information systems including health information and cost recovery reporting systems; (iii) PHC management training; and (iv) testing of innovative approaches to PHC financing. Through these activities, the Project will improve PHC coordination and management, and enhance sustainability of the Government's activities in the PHC sector.

E. Risks

130. Four Project-related risks could affect implementation of the Project and sustainability of its benefits.

131. **Financial Management**. The first PHC project was affected by inadequate delegation of financial management authority, but succeeded in streamlining financial management procedures. MOH will be given increased financial management authority, including management of the project imprest account.

132. **Procurement Capacity**. The capacity for procurement procedures of goods and services in MOH is still weak. The Project will set up a procurement unit and will have consultants to assist with procurement. The Project will also assist MOH to improve general procurement capacity in MOH.

133. **Staff for Health Centers**. While there is excess health staff, they are underpaid and generally not willing to be relocated to places where they can not generate additional income. The Government has agreed to provide incentives for staff to be relocated, and is considering a proposal for a hardship allowance to be paid to staff posted in remote locations. In addition, the Government has agreed to increase training of persons from ethnic minorities to work within their communities.

134. **Financial Constraints.** The Government is in a tight fiscal situation, although its long-term economic prospects are good. This may affect counterpart funding and financial sustainability. The proposed expansion of the network of health facilities has been rationalized in view of the recurrent cost implications. A financial plan has been prepared examining counterpart fund requirements including the provincial contributions, and recurrent cost requirements in comparison to public health sector expenditures after project completion.

VI. ASSURANCES

135. The Government has given the following assurances, in addition to the standard assurances that will be incorporated in the legal documents:

(i) The Government will have established provincial PHC coordination units or have made other arrangements to ensure strong provincial PHC coordination within one year of the effective date of the loan.

(ii) The targeted provinces will prepare annual operational plans for the provincial health sector, including budgets identifying sources and uses of funds.

(iii) The Government will ensure that the health budget for the targeted provinces will be maintained at the level of fiscal year 2000 or increased in real terms, and that the provincial health sector budgets will allocate sufficient funds for the recurrent costs resulting from the Project, in particular for MCH and birth spacing services.

(iv) Within two years of the loan effectiveness date, the Government will issue new cost recovery guidelines that make provision of services affordable for the very poor.

(v) The Government will ensure that counterpart funds, including from the provinces, are available in time and according to the estimates agreed upon with the MOH steering committee each year as per the project implementation plan.

(vi) Within six months of the effective date of the loan, MOH will have established a project procurement unit and developed guidelines to streamline procurement procedures and guarantee timely arrival of goods and services in accordance with the project implementation plan.

(vii) The targeted provinces will prepare a comprehensive plan for all new and renovated health facilities including a maintenance plan prior to the commencement of the construction, and ensure that this plan is implemented during and after project implementation.

(viii) The provinces will ensure that any unavoidable involuntary resettlement and land acquisition by the Project will be carried out in accordance with ADB policies and guidelines.

(ix) The Government will ensure that proper waste disposal is included in the design of health facilities. Refuse handling and disposal measures for hazardous medical waste such as syringes and needles will be specifically addressed in the design and operation of health facilities.

(x) The provinces will ensure that for all new health facilities to be constructed, a staffing plan is available and approved prior to commencement of construction. In particular, they will ensure that construction of health centers to serve ethnic minorities will not start before a person from the local ethnic minority has been identified as a proposed staff member for the facility, and has started training.

(xi) Within one year of the loan effectiveness date, the Government will have identified candidate trainees, particularly from ethnic minorities, to participate in the training program that will impart skills equivalent to those of auxiliary nurses. Within two years of the loan effectiveness date, training will have started in each of the project provinces and the Government will have developed a staffing plan that will include the placement of trainees, especially of ethnic minorities who have completed the training program.

(xii) ADB may request the Government to arrange for an independent audit, either local or international, to be financed from loan proceeds.

VII. RECOMMENDATION

136. I am satisfied that the proposed loan would comply with the Articles of Agreement of ADB and recommend that the Board approve the loan in various currencies equivalent to Special Drawing Rights 14,956,000 to the Lao People's Democratic Republic for the Primary Health Care Expansion Project, with a term of 32 years, including a grace period of 8 years, and with an interest charge at the rate of 1 percent per annum during the grace period and 1.5 percent per annum thereafter, and such other terms and conditions as are substantially in accordance with those set forth in the draft Loan Agreement presented to the Board.

TADAO CHINO
President

31 July 2000

APPENDIXES

No.	Title	Page	Cited on (page, para.)
1	Project Framework	34	1, 2
2	Key Indicators	37	3, 7
3	Major External Assistance in the Lao PDR Health Sector	38	9, 38
4	Primary Health Care Packages	40	14, 59
5	Indicative Training Plan	42	16, 65 19, 82
6	Project Organization	45	18, 78
7	Cost Estimates and Financing Plan	46	21, 90
8	Project Implementation Schedule	49	23, 97
9	Civil Works Summary	51	23, 99
10	Equipment, Drugs, and Supplies	52	24, 100
11	Indicative Terms of Reference of Consultants	54	24, 101
12	Social Analysis and Ethnic Minorities Strategy	57	27, 112
13	Benefit Monitoring and Evaluation	66	27, 116
14	Economic Analysis	69	28, 121

SUPPLEMENTARY APPENDIXES

(available upon request)

Supplementary Appendix: A: Lessons learned

Supplementary Appendix B: Indicative List of Equipment, Drugs, and Supplies

Supplementary Appendix C: Civil Works Plan

Supplementary Appendix D: Terms of Reference of Government Counterparts

Supplementary Appendix E: Short Resettlement and Land Acquisition Plan

PROJECT FRAMEWORK

Design Summary	Project Targets (Verifiable Indicators)	Monitoring Mechanisms	Assumptions and Risks
Goal: To improve the health status of the people in the Lao People's Democratic Republic based on equity, participation, and sustainability.	In six years: ■ infant mortality rate reduced from 104 to 75/1,000 live births, ■ infant mortality rate among poor reduced from 140 to 100/1,000 live births, ■ maternal mortality ratio reduced from 490 to 355 per 100,000 live births, ■ primary health care (PHC) management is integrated, and ■ public PHC pending increased by 50 percent in real terms.	■ Household survey ■ Population census ■ Evaluation	■ Political stability. ■ Positive socioeconomic development. ■ Supportive policy environment. ■ Continuing institutional capacity development. ■ Maternal mortality ratio measures trends, and is not an appropriate indicator to measure project impact.
Objective/Purpose: To improve the PHC coverage, in particular of women and infants, the poor, and ethnic minorities in northern areas.	■ Use of health facilities doubled for poor ■ Recall of key facts about malaria, diarrhea, pneumonia, nutrition, immunization, HIV/AIDS, and addiction doubled among young adults. ■ Contraceptive prevalence rate increased from 23 to 45 percent. ■ Hospital delivery rate increased from 10 to 20 percent. ■ Eligible children fully immunized increased from 32 to 68 percent. ■ Iodized salt use increased from 67 to 90 percent. ■ Children under five sleeping under treated mosquito nets increased from 14 to 40 percent.	■ Household survey ■ Health facility checks and exit interviews ■ Household survey ■ Bi-annual evaluation	■ Targets include inputs from other programs and agencies. ■ Project reaches targeted population and obtains disaggregated data. ■ Adequate supplies.
Output **Component 1: Improved Access to Quality PHC in northern provinces**			
a. Increased access to PHC.	■ Household access to health facility within 1 hour increased from 30 to 50 percent.	■ Household survey. .	■ Construction in poorly accessible areas risks delay and cost escalation.
b. Improved quality of PHC.	■ Tested staff skills improved by 50 percent. ■ Patient satisfaction improved by 50 percent.	■ Spotchecking and skills testing.	■ Procurement is improved. Government agrees to incentive package for staff to be posted to health centers.
c. Improved availability of reproductive health services.	■ Household access to birth spacing services increased from 10 to 50 percent.	■ Household survey and spotchecking	■ United Nations Populations Fund (UNFPA) support.
d. Better village health care.	Household access to trained VHPs and volunteers improved by 50 percent.	■ Household Survey	■ Suitable VHPs and volunteers are identified.

Design Summary	Project Targets (Verifiable Indicators)	Monitoring Mechanisms	Assumptions and Risks
Component 2: Strengthened Institutional Capacity for PHC			
a. Strengthened PHC Coordination.	■ Tested PHC coordination improved by 50 percent.	■ Spotchecking.	■ Government will approve to establish PHC coordination unit.
b. Standardized PHC management systems	■ Five guidelines for PHC management (planning and budgeting, monitoring, accounting, cost recovery, and supervision) agreed on and disseminated to all provinces.	■ Project evaluation.	■ Government will direct external agencies to harmonize and improve management systems.
c. Skilled staff in PHC management.	■ Management skills improved by 50 percent.	■ Skills testing.	■ Government will approve overseas training for staff.
d. Tested financing options	■ Financing options have been tested including evaluation of mechanisms to subsidize the poor .	■ Evaluation of studies.	Government will agree to wave tax on user fees for pilot testing of financing studies.

Project Activities: **Component 1: Improving Access to Quality PHC in northern provinces**			
■ Preservice training of ethnic minority persons. ■ Redistribution of staff with incentives. ■ Expansion of primary care. ■ Expansion of surgical services.	■ Training and recruiting 100 ethnic minority students as auxiliary nurse or equivalent. ■ 10 percent of staff posted to new health centers. ■ 41 health centers added. ■ 11 district hospitals and 5 provincial hospitals expanded.	■ Monthly provincial report.	■ Suitable ethnic minority candidates can be found ■ Coordination with rural roads projects. ■ Good locations for health centers found. ■ No resettlement.
■ In-service training of all health staff. ■ Equipping facilities. ■ Providing medical supplies for the poor. ■ Supervision support. ■ Improving referral.	■ In-service training of 430 staff. ■ All health centers are adequately equipped. ■ Very poor receive free medical care. ■ 6 health centers, and 19 district hospitals renovated.	■ Monthly provincial report.	■ In-service training centers completed in time. ■ Procurement capacity improved.
■ Training all staff and supervisors in reproductive health services. ■ Supervision support. ■ Pilot for clinical outreach services.	■ All health staff trained in reproductive health services. ■ Outreach program achieves 70 percent of planned visits.	■ Monthly provincial report.	■ UNFPA inputs obtained. ■ Recurrent cost for maternal and child care and birth spacing increased. ■ Timely purchase of vehicles for supervision and outreach services.
■ Village mobilization. ■ VHP and volunteer training and supply. ■ Establishment of revolving drug fund. ■ Support for public health schemes.	■ Number of villages mobilized (one to two clusters per health center per year). ■ Training of 1,200 VHPs and 5,000. ■ 80 percent of drug revolving funds are functioning.	■ Monthly provincial reports.	■ Government staff are willing to do field visits. ■ Cooperation of departments concerned with public health.

2. Component 2: Strengthening Institutional Capacity for PHC			
■ Project Management. ■ Establishing PHC coordination units. ■ Coordination of programs and projects.	■ Project Implementation Offices established in 6 months ■ PHC coordination units established in 12 months. ■ Provincial annual plans and budgets approved incorporating major programs and projects.	■ Monthly Project Management Office (PMO) report	■ PHC Coordination Units have sufficient capacity to provide PHC coordination.
■ Analyze, design and test management systems ■ Develop consensus among stakeholders	■ Number of subsystem designs that have been developed. ■ Number of planning workshops held with stakeholders.	■ Monthly PMO report	■ Suitable domestic consultants can be identified.
■ Training and fellowships	■ 30 MOH staff, 38 provincial staff, and 82 district staff trained. ■ 15 obtain masters degree training.	■ Monthly PMO report	■ No ban on fellowships.
■ Pilot studies	■ Number of pilot studies ongoing.	■ Monthly PMO report	■ Provincial approval of study.

Design Summary	**Project Targets (Verifiable Indicators)**	**Monitoring Mechanisms**	**Assumptions and Risks**
Inputs:			
■ Consultants for civil works, procurement, training, monitoring, management, financing and accounting. ■ Mapping and construction of health centers. ■ Construction of hospitals and PHC Coordination Units. ■ Establishment of procurement unit. ■ Recurrent budget for reproductive health services. ■ Approval of financial study designs. ■ Coordination with UNFPA, AUSAID and external funding agencies' programs.	■ Proportion of planned consultants recruited. ■ Percent mapping completed. ■ Percent civil works completed. ■ Percent procurement of equipment and supplies completed. ■ Recurrent budget for MCH and birth spacing services as a proportion of targeted budget. ■ Decree for establishment of PHC Coordination Unit approved. ■ Financing study designs approved.	■ Monthly civil works report. ■ Monthly PMO report ■ Monthly provincial report. ■ Budget.	■ Communities contribute to construction in time. ■ Decentralization of authority for procurement. ■ UNFPA inputs. ■ Government approves establishment of PHC Coordination Units. ■ Government agrees to recruit consultants. ■ Other agencies cooperate.

KEY INDICATORS

Table A2.1: Demographic and Health Indicators

Province	Total Provincial Population/ Population Density[c]	House-hold Size[c]	Women with Education[b]	Percent Females Delivering Live births Last Year[a]	MMR per 100,000 Live births[d]	IMR per 1,000 Live births[b]	Life Expectancy Females; Males[b]
Phongsali	152,322/10	6.1	25	17	1,064	94	58;55
Louang Namtha	123,237/14	5.9	20	16	1,595	119	55;52
Oudomxai	221,378/15	6.6	24	24	1,304	88	58;55
Bokeo	122,342/19	6.0	27	22	1,489	82	54;51
Louang Phrabang	395,968/23	6.3	39	14	872	132	53;50
Houaphan	278,421/16	7.7	41	25	656	125	53;51
Sayaburi	318,538/19	6.7	55	10	1,118	130	51;49
Vientiane Municipality	571,999/152	6.5	78	8	228	72	59;57
Xieng Khouang							
Vientiane Province	236,909/11	7.7	47	22	551	121	54;52
Lao PDR	332,850/15	6.6	61	12	454	102	54;52
	5,087,322/20	6.5	48	17	656	104	52;50

Sources: a: Lao Expenditure and Consumption Survey 1997/98, published 1999; b: National Statistics Center, Census 1995; c: Provincial Planning and Statistics Departments; d: Report on Multiple Indicator Cluster Survey, 1993, National Statistics Center.

Table A2.2: Primary Health Care Coverage

Province	Percent Villages with Clean Water Supply	Percent of Children Under Five Sleeping Under Impregnated Bednet	Percent Children 12-23 Months; Fully Immunized	Percent House-holds Using Iodised Salt	Contra-ceptive Preva-lence Rate	Percent Delive-ries in Health Facility	Percent Villages with Basic Drugs Available	Percent Villages with at Least One Modern Medical Practitioner	Percent Villages Within One Hour of Health Center	Percent Villages Within Four Hours of Hospital
Phongsali	32	22	20	61	16	4	18	50	11	46
Louang Namtha	42	27	42	42	19	8	36	59	14	91
Bokeo	63	8	21	58	24	7	37	63	50	80
Louang Phrabang	50	28	31	76	26	11	33	70	53	80
Houaphan	30	3	20	65	22	7	40	80	47	60
Vientiane Province	61	6	42	69	39	17	75	89	82	96
Weighted Mean of 11 provinces	45	14	32	67	23	9	45	73	52	79

Source: Project Preparatory Technical Assistance Household Survey.

MAJOR EXTERNAL ASSISTANCE IN THE LAO PDR HEALTH SECTOR

Project Title	Period	Source of Funding[a]	Amount ($)	Project Objectives and Achievements	Major Lessons Learned
Primary Health Care (PHC) Project	1995-2000	ADB Government	5.0 million 1.2 million	• Improve access to PHC in Xieng Khouang and Oudomxai provinces, including construction of 73 health centers and water supply. • Health worker training and supervision. • Monitoring drug quality. • Construction of 8 district hospitals.	Difficult to expand the network of PHC centers in remote communities due to limited capacity, and lack of staff from ethnic communities.
Health and Social Development Project	1997-2001	AusAid-ACIL Government	5.9 million 0.8 million	• PHC service delivery, including strengthening of provincial and district management; training in management and program areas; construction of 60 health centers, 5 maternal and child care centers and hospitals to date; training village health volunteers; revolving drug fund. • Social development in 150 villages to date.	Limited absorptive capacity in Phongsali Province.
Louang Namtha PHC Project	1993-1999	Enfant et Developement	0.8 million	• Renovation of 3 hospitals and construction of 3 health centers. • Training and supervision. • Village-level activities in 35 villages to date.	Different levels have to be developed simultaneously.
Malaria Control Project	1997-2001	European Union Government Regional budget	5.4 million 0.2 million 5.2 million	• Early diagnosis and treatment of malaria by village health workers. • Vector control using impregnated mosquito nets. • Early detection/control of epidemics.	Project management should be transparent and inclusive; supervision is the key to quality and performance; provincial staff need considerable support.
Sexually Transmitted Diseases Project	1997 2000	European Union	1.3 million	• Policy and program development for sexually transmitted diseases control. • Training of project trainers.	
Family Health Project	1996-2005	GTZ	6.0 million	• Improving PHC in Borikhamxai Province, including needs assessment, training, construction of health centers, integrated village health development, and upgrading of district hospitals.	Each level makes its own design based on identified needs using participatory approach.
National HIV/AIDS Control Program	1997-2001	UNAIDS and others	0.2 million	• Establishment of national and provincial committees. • Preparation of national plan. • Support for specific projects, e.g., for education, blood safety, etc.	• Multisectoral approach is best. • Bottom-up planning improves effectiveness and sustainability. • Involvement of high-level decision-makers is essential. • Capacity building is first priority.
Lao-Japan-WHO Joint PHC Project-Khammouane	1992-1998	JICA-WHO	Not available	• Formation of provincial and district health management teams. • Construction and staffing of seven health centers. • Establishment of a training center and training of district health staff and village health volunteers. • National support for immunization, malaria, and PHC policy.	• Must have stronger PHC structure at central level. • District health management teams didn't work well. Support from villages is intrinsic to the success of the projects. Training of village health volunteers and the revolving drug funds worked well. Difficult to make new health centers in remote locations operational.

Country Program	1998-2000	Medecins Sans Frontieres	1.4 million	PHC development in six districts hospitals in Champassak Province, three in Xekong province, and three in Bokeo province; and construction of 1-2 health centers per district.	Some health centers are not operational due to location; expansion of health centers will be modest.
Sayaburi PHC Project	1998-2001	AusAid/Save the Children Australia IFAD	1.0 0.7	Expansion of PHC in four districts including: (i) village health volunteers and traditional birth attendants; (ii) construction of 17 health centers; (iii) training, incentives, and supervision; (iv) drug revolving fund; and (v) water supply program.	This is a successful model of PHC development in the Lao PDR–very well designed and effective at all levels.
Health Services Improvement Project	1997-2000	Swiss Red Cross UNDP	0.4 0.2	In six northern districts: (i) health management improvement, (ii) construction of six health centers and upgrading of two district hospitals, (iii) revolving drug fund, (iv) management system for equipment procurement, and (v) training.	• System design is labor intensive. • Projects tend to overestimate the system's absorptive capacity for budget and activities. Management weakness is a main mitigating factor in the success of any project. • Project should be well integrated in the provincial health offices.
Second Country Program	1998-2001	UNFPA Government	5.6 0.5	• Reproductive health and advocacy, targeting 8-16 villages in 111 districts; including training, supplies and promotion through Lao Youth Union and other channels. • Population and development planning.	
Health and Nutrition	1998-2002	UNICEF	8.9 million	• Health policy development. • Child survival, including expanded programme on immunization, communicable disease control, and acute respiratory infection; and nutrition. • Safe motherhood.	• National level policies and PHC coordination is required. • Planning and management should have national-level involvement. • Ministry of Health management systems need clear designs and monitoring. • Program design needs involvement of key decision-makers.
Health System Reform and Malaria Control Project	1995-2001	World Bank Government Belgium	19 million 2.4 million 2.0 million	• Malaria control in eight provinces. • Basic health services in Savannakhet, Xekong, Xalsomboun special zone, and Boloven plateau. • Health education in five provinces.	Construction designs should take into account local conditions.
WHO Country Program		WHO	1.6 million	• Health policy and systems development. • Human resources development. • Expanded program of immunization. • Vector-born diseases control. • Others.	

[a] ACIL - ; ADB – Asian Development Bank; AusAid – Australian Agency for International Development; GTZ – German Technical Cooperation; IFAD – International Fund for Agricultural Development; JICA – Japan International Cooperation Agency; HIV/AIDS – human immunodeficiency virus/acquired immunodeficiency syndrome; UNAIDS - ; UNDP – United Nations Development Programme; UNFPA – United Nations Populations Fund; UNICEF – United Nations Children's Fund; WHO – World Health Organization.

PRIMARY HEALTH CARE PACKAGES

Table A4.1: Basic Health Packages at Village Level

Package	Village Health Volunteers and Village Health Care Provider
Health education and health information	Personal hygiene and sanitation, immunization, family planning, nutrition advice (vitamin A, Iodized salt, balanced diet), organization of immunization and other campaigns, safe sex, sexually transmitted diseases (STD), risk of addiction, using visuals.
Control of infectious diseases	Improving living conditions in village including for malaria control, control of diarrheal diseases, improved nutrition (vitamin A distribution and use of iodine salt), using demonstration, meetings, visits. Immunization in addition for village health care providers (VHPs).
Treatment of common diseases	For VHPs only. Fever, diarrhea, cough with and without rapid breathing and fever, possible tuberculosis, skin infections, wound, pain, worms; with revolving drug fund and provision of basic equipment after training.
Maternal care	Early recognition of complications and timely referral, provision of oral contraceptives and condoms free of cost, clean and safe delivery, treatment of anemia and malaria, with provision of birth attendant kit and basic supplies including, vitamin A, malaria and anemia treatment, and contraceptives.

Table A4.2: Health Packages at Health Center Level

Package	Health Center
Immunization	Delivery of expanded program on immunization with fixed or portable cold chain.
Family planning	Counselling, provision of injectables, pills, condoms, IUDs, surgical sterilization through mobile team strategy.
Maternal care	In type A health centers: sterile delivery, manual removal of the placenta, vacuum aspiration for incomplete abortion, post abortion care, medication before transfer, transfer, counselling. In type B health centers: sterile delivery, medication before transfer, counselling. Antenatal care such as treatment of malaria, anemia, identification of complications, information about complications and counselling.
Micronutrient supplementation	Vitamin A supplementation for children 6-71 months and mothers within one month after delivery, information on iodized salt.
Control of sexually transmitted diseases	Information on HIV/AID and STD, treatment of STD in type A health centers, periodic examination of opportunities with mobile teams.
Malaria control	Insecticide treated net.
Management of common diseases with a particular focus on diarrhea, acute respiratory infection, malaria	Minor surgery in type A health centers (incision, sutures), wound care, skin diseases, pain management etc. Referral.
Supervision and logistic basis for VHPs	Quarterly supervision of VHPs using a simple standardised checklist, resupply of VHPs with contraceptives, vitamin A, iron, clean delivery kits, chloroquine, oral rehydration solution, other drugs if any, training on site for VHPs.

Table A4.3: Health Packages at District Hospital and District Health Service Level

Package	District Health Service and Hospital
Medicine	Diagnosis and treatment of common diseases with particular emphasis on case management of malaria including cerebral malaria, acute respiratory infection, diarrhea, tuberculosis.
Surgery	Minor surgery in type B hospitals. Minor surgery plus surgical emergencies and particular focus on caesarean section in type A hospitals. Surgical sterilization for males and females.
Reproductive health care	Delivery, management of obstetric abortion and delivery complications, family planning, antenatal and postnatal care, prevention and management of STDs and reproductive tract infections, prevention of HIV/AIDS.
Laboratory	Parasitology. Transfusion. Basic hematology.
Pharmacy	Essential drugs with revolving drug fund.
Outreach and preventive activities	Immunization and logistical support to health centers and VHPs for immunization, organization of ITN campaign, sanitation, health education.
Training, supervision, and logistic basis for health centers	Training of health workers and VHPs, supervision of health centers and VHPs, resupply of health centers.

INDICATIVE TRAINING PLAN

Trainees	Training	Training location	Trainers	Training duration	Number to be trained	Refresher courses	Number to be retrained
Component 1: Improving Access to Quality PHC in the Northern Region							
Village level							
Village health volunteers	Basic health promotion package	Health center	Health center staff with district support	6 days	3,600	2 days per 2 years	7,200
Village health care providers (VHPs)	Basic health care package including drug revolving fund	District hospital	Doctor at district hospital with provincial support	6 weeks	1,200	1 week per year	4,800
Health Center Level							
Auxiliary nurses from ethnic minorities	Basic science and language training	Provincial school	Science and Language teachers	1 year	100		
Auxiliary nurses including from ethnic minorities	Basic auxiliary nurse training package	Provincial nurse training school	Provincial staff	1 year	200		
Medical assistants, state nurses, and auxiliary nurses	Basic training package	Provincial hospital	Doctor at provincial hospital	4 weeks	430	1 week per year	1,720
Medical assistants, state nurses, and auxiliary nurses	Maternal care and family planning package	Provincial or regional hospitals	Specialist and nurse	4 weeks	150	3 days per year	600
District Level							
Medical assistants, state nurses and doctors	Case management of common diseases	Provincial hospital	Provincial trainers	1 week	170	3 days per year	680
Medical doctors	Obstetric and general surgery	Mahosot and provincial hospitals	Mahosot and provincial surgeons	1 year	10	As needed	
Medical doctors	Anaesthesia	Mahosot and provincial hospitals	Mahosot and provincial anaesthetists	6 months	10	As needed	
Medical doctors, medical assistants, and state nurses	Reproductive health care	Regional hospitals Provincial hospital	Provincial staffs	3 months	100	1 month per 3 years	400
Laboratory staff	Mini-laboratory package	Provincial hospital	Provincial laboratory staff	3 months	35		105
Supervisory team	Training in health center supervision	Provincial health office	Provincial and central level trainers	3 weeks	100	3 days per year	400
Maternal care staff	Training of trainers in maternal care for birth attendants	Provincial health office and hospital	Provincial and central level staff	1 week	70	1 week per 3 years	70

Trainees	Training	Training location	Trainers	Training duration	Number to be trained	Refresher courses	Number to be retrained
Clinical staff	Training of trainers for VHPs	Provincial hospital	Provincial and central level staff	1 week	70	1 week per 3 years	70
Hospital concerned staff	Cost recovery training	District	Provincial trainer	2 weeks	240	3 days per year	960
Administrative hospital staff	Hospital management course including wastes management	Province	Provincial/central trainers	4 weeks	90	3 days per year	360
Provincial Level							
Medical assistants, state nurses	Nurse inspector training	Central hospitals	Senior nurse inspectors	4 months	50		
Clinical staff	Case management of common diseases	Provincial hospital	Provincial trainers	2 weeks	40	3 days per year	160
Medical doctors	Surgery	Teaching hospitals	Surgeons	1 year	4	As needed	
Medical doctors	Anesthesia	Teaching hospitals	Anaesthetists	6 months	4	As needed	
Medical doctors, medical assistants, and state nurses	Reproductive health care package	Regional hospital	Regional trainers	3 months	24	1 month per 3 years	24
Laboratory staff	Laboratory package	Regional hospital	Regional trainers	3 months	8	2 weeks per 3 years	8
Provincial health office, hospital staff	Training of trainers and supervisors for training of health center staff, VHPs	Province	Central level trainers	2 weeks	48	1 week per 3 years	48
Provincial hospital concerned staff	Cost recovery training	Central	Central level trainers	2 weeks	96	3 days per year	384
Accountants in the hospital and provincial health service	Accounting training	Regional/central	Central level trainers	4 weeks	32	1 week per 3 years	16
Procurement officers in the hospital and health service	Local procurement training	Regional/central	Central level trainers	2 weeks	32		
Provincial hospital direction	Hospital management course	Regional/central	Central level trainers	4 weeks	21	3 days a year	84
Regional and Central Level							
Ministry of Health and regional master trainers	Training of health staff	Central or regional	Central level trainers	2 weeks	10	1 week per 3 years	10
MOH and regional master trainers	Training of teachers on cost recovery training	Regional hospital	Central level trainers	1 week	10	1 week per 3 years	10
MOH and regional master trainers	Integrated childhood management	MOH, UNICEF, WHO	International level trainers	2 weeks	10		

Trainees	Training	Training location	Trainers	Training duration	Number to be trained	Refresher courses	Number to be retrained
MOH and provincial maternal and child care (MCH) leaders	MCH fellowship	Regional country	University	1 year	5		
Component 2: Institutional Capacity Building for PHC							
District health office staff	PHC management training including monitoring, supervision.	Province	Provincial/central trainers	4 weeks	82	1 week per 2 years	164
Provincial health office staff	PHC management training, including planning, budgeting, implementation, monitoring, supervision.	Region	Central level master trainers	4 weeks	38	1 week per 2 years	76
Provincial health office staff	Office management training	Province	Central level trainers	1 week	38	3 days per 2 years	76
MOH staff	Program and project evaluation	Central	Central level trainers	2 weeks	10		
MOH procurement unit	Local and international procurement training	Central	International (Asian Development Bank)	2 weeks	10	3 days per 2 years	20
MOH master trainers	Training for teachers on PHC management trainers	MOH	Central level trainers (training developers)	1 week	10	3 days per 2 years	20
MOH and provincial PHC leaders	PHC, public health fellowship	11 regionals, 4 overseas	University	1 year	15		
MOH, provincial, district PHC leaders	Local study tours	In-country		2 weeks	172		
MOH, regional PHC leaders	Study tours, conferences	Foreign country	International	2 weeks	25		
Provincial health office staff	English training	Central	English training school	1 year	21		

Appendix 6

PROJECT ORGANIZATION
Central and Provincial Levels

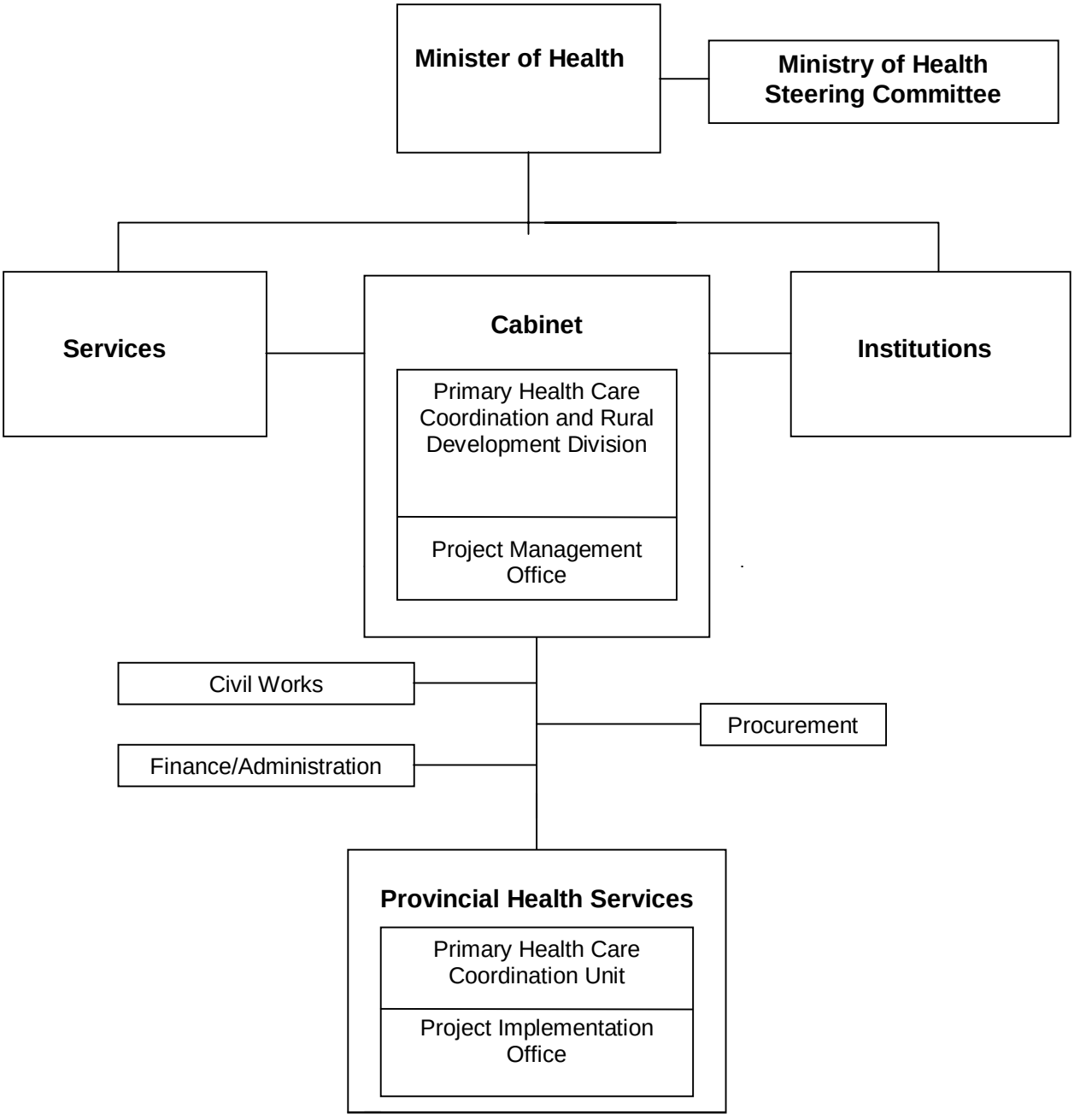


Table A7.1: Project Cost Estimates by Category
($'000)

Category	Foreign Exchange	Local Currency	Total Cost
A. Base Cost			
1. Civil Works and Land Acquisition	2,282	4,681	6,963
2. Equipment and Furniture	2,196	864	3,060
3. Vehicles	1,063	0	1,063
4. Drugs and Supplies	805	805	1,610
5. Staff Development	361	1,446	1,807
6. Workshops, Studies, System Development	172	401	573
7. Consulting Services	837	837	1,674
8. Management and Monitoring	240	960	1,200
9. Operations and Maintenance	934	1,400	2,334
10. Duties and Taxes[a]	0	1,139	1,139
Subtotal (A)	**8,889**	**12,532**	**21,421**
B. Contingencies			
1. Physical[b]	578	772	1,350
2. Price[c]	591	972	1,563
Subtotal (B)	**1,169**	**1,744**	**2,913**
C. Interest on Loan[d]	**666**	**0**	**666**
Total	**10,724**	**14,276**	**25,000**
Percent	43	57	100

[a] Estimated at 10 percent of local cost.
[b] Estimated at eight percent for civil works and medical equipment; five percent for office equipment, transport and travel; three percent for drugs and medical supplies; two percent for consulting services, training, and research; and 10 percent for land acquisition, operations and maintenance.
[c] Estimated at an annual factor of 2.4 percent of the foreign and local project costs in dollar terms.
[d] Estimated at an annual factor of 1.0 percent on cumulative disbursed funds during Project implementation.
Source: Staff Estimates.

Table A7.2: Financing Plan by Year
($'000)

Category	2001			2002			2003		
	ADB	Govt	Total	ADB	Govt	Total	ADB	Govt	Total
Civil Works	368	50	418	1,777	242	2,020	1,847	252	2,099
Land Acquisition	0	443	443	0	619	619	0	128	128
Medical Equipment and Furniture	1,196	0	1,196	744	0	744	340	0	340
Office Equipment and Furniture	185	35	220	168	32	200	0	0	0
Vehicles	402	0	402	586	0	586	75	0	75
Drugs and Supplies	351	39	390	356	40	395	239	27	265
Staff Development	161	31	192	406	77	483	318	61	378
Workshops, Studies, System Development	138	0	138	53	0	53	139	0	139
Consulting Services	381	0	381	381	0	381	246	0	246
Project Management	202	28	230	150	20	170	202	28	230
Operations and Maintenance	117	37	154	152	48	200	357	113	470
Subtotal	**3,501**	**662**	**4,164**	**4,771**	**1,078**	**6,850**	**3,763**	**607**	**4,370**
Taxes	0	202	202	0	321	321	0	258	258
Physical Contingencies	215	54	269	311	78	389	244	61	305
Price Contingencies	80	49	129	227	98	325	258	95	353
Interest on Loan	33	0	33	79	0	79	113	0	113
Total Project Costs	**3,829**	**967**	**4,797**	**5,388**	**1,575**	**6,964**	**4,378**	**1,021**	**5,399**

Category	2004			2005			2006			TOTAL		
	ADB	Govt	Total	ADB	Govt	Total	ADB	Govt	Total	ADB	Govt	Total
Civil Works	623	85	708	299	41	340	106	14	120	5,020	685	5,705
Land Acquisition	0	68	68	0	0	0	0	0	0	0	1,258	1,258
Medical Equipment and Furniture	240	0	240	120	0	120	0	0	0	2,640	0	2,640
Office Equipment and Furniture	0	0	0	0	0	0	0	0	0	353	67	420
Vehicles	0	0	0	0	0	0	0	0	0	1,063	0	1,063
Drugs and Supplies	198	22	220	153	17	170	153	17	170	1,449	161	1,610
Staff Development	283	54	336	189	36	224	162	31	193	1,518	289	1,807
Workshops, Studies, System Development	53	0	53	137	0	137	52	0	52	573	0	573
Consulting Services	222	0	222	222	0	222	222	0	222	1,674	0	1,674
Project Management	150	20	170	202	28	230	150	20	170	1,055	144	1,199
Operations and Maintenance	378	119	498	385	122	507	385	122	507	1,774	560	2,334
Subtotal	**2,146**	**369**	**2,515**	**1,707**	**243**	**1,950**	**1,230**	**204**	**1,434**	**17,118**	**3,164**	**20,282**
Taxes	0	150	150	0	119	119	0	90	90	0	1,139	1,139
Physical Contingencies	134	34	168	102	26	127	73	18	92	1,079	271	1,350
Price Contingencies	200	68	268	196	63	259	175	54	229	1,136	427	1,563
Interest on Loan	133	0	133	148	0	148	160	0	160	666	0	666
Total Project Costs	**2,613**	**621**	**3,234**	**2,153**	**451**	**2,604**	**1,638**	**366**	**2,005**	**20,000**	**5,000**	**25,000**

Sources: Government and Staff Estimates.

Table A7.3: Project Cost Estimates by Province by Year
($ '000)

	2001	2002	2003	2004	2005	2006	Total
A. Base Cost							
1. Bokeo	318	647	566	363	366	125	2,385
2. Louang Namtha	874	993	573	161	152	132	2,885
3. Phongsali	264	270	493	385	130	109	1,651
4. Houaphan	323	404	553	505	141	120	2,046
5. Oudomxai	139	701	755	196	176	155	2,121
6. Xieng Khouang	225	301	160	179	159	138	1,162
7. Louang Phrabang	719	865	47	46	45	45	1,768
8. Sayaburi	148	118	326	48	36	35	712
9. MOH and other provinces	1,152	1,550	896	632	745	574	5,551
Subtotal	**4,164**	**5,850**	**4,370**	**2,515**	**1,950**	**1,434**	**20,282**
B. Duties and Taxes	**202**	**321**	**258**	**150**	**119**	**90**	**1,139**
C. Contingencies							
1. Physical	269	389	305	168	127	92	1,350
2. Price	129	325	353	268	259	229	1,563
Subtotal	**397**	**714**	**658**	**436**	**386**	**321**	**2,913**
D. Interest	**33**	**79**	**113**	**133**	**148**	**160**	**666**
Total	**4,797**	**6,964**	**5,399**	**3,234**	**2,604**	**2,005**	**25,000**

PROJECT IMPLEMENTATION SCHEDULE

Activity	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
1. Improving Access to Quality PHC in Northern Region																								
a. Increasing Access to Primary Care																								
Design and contract for construction of health centers																								
Construct dispensaries																								
Design and contract for construction, renovation, upgrading of district hospitals																								
Build, upgrade, renovate district hospitals																								
Design and contract for construction, renovation, upgrading of provincial hospitals																								
Build, upgrade, renovate provincial hospitals																								
Design and contract for upgrading of PHC referral facility																								
Upgrade PHC referral facility																								
b. Improving Quality of Care																								
Design and contract for construction, upgrading, rehabilitation of provincial auxiliary nurse schools																								
Construct, upgrade, rehabilitate provincial auxiliary nurse																								
Procure drugs, equipment, supplies, furniture, vehicles																								
Preparation of training program and training material																								
Identification of and pretraining for ethnic minority staff																								
Staff training																								
Staff retraining																								
Supervision																								
c. Strengthening maternal and child care and family planning services																								
Procurement of drugs, supplies																								
Staff training																								
Staff retraining																								
Supervision																								
Mobile teams																								
Regional fellowships																								
d. Exploring Village Health Care Promotion																								
Selection of cluster villages and VHPs (starts in Xieng Khouang and Oudomxai)																								
Procurement of drugs and supplies																								
Training of VHPs (starts in Xieng Khouang and Oudomxai)																								
Supervision of VHPs																								

Activity	Year 1				Year 2				Year 3				Year 4				Year 5				Year 6			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
2. Institutional Capacity Building for PHC																								
a. Strengthening PHC Coordination																								
Establish provincial PHC coordination offices																								
Build, renovate office space																								
Procure equipment, furniture, communications																								
Procure vehicles																								
Supervision of provincial PHC units																								
Annual planning meetings																								
b. Standardize and Implement Management Systems																								
Adapt and standardize systems																								
Disseminate organizational structure guidelines																								
c. Staff Development for PHC Management																								
PHC management course																								
Hospital management course																								
Cost recovery guidelines and methods course																								
In-country regional study tours																								
International study tours and conferences																								
PHC conference																								
Regional and overseas fellowships																								
d. Testing Innovative Financing Approaches																								
Village revolving drug fund																								
(i) systems design and training																								
(ii) implementation																								
(iii) monitoring and evaluation																								
Cost base pricing system for public health service																								
(i) systems design and training																								
(ii) implementation																								
(iii) monitoring and evaluation																								
Provincial health care subscription system																								
(i) Baseline survey																								
(ii) systems design and training																								
(iii) implementation																								
(iv) monitoring and evaluation																								

PHC - primary health care; VHP - village health providers.

CIVIL WORKS SUMMARY

No.	Type of Facility			Bokeo	Louang Namtha	Phongsali	Houaphan	Oudomxai	Xieng Khouang	Louang Phrabang	Sayaburi	Total
1	Provincial Hospitals	New Construction		0	1	0	0	1	0	0	0	2
		Renovation		1	0	1	1	0	1	1	1	6
2	District Hospital	New Construction		2 (Tonpheung 1, Paktha 1)	1 (Sing)	1 (Samphan)	1 (Xam - Tai)	0	0	0	0	5
		Renovation		3 (Houayxay 1, Meung 1, Pha-Oudom 1)	2 (Phoukha 1, Long 1)	2 Mai 1, Khoa 1)	2 (Houamuang 1, Viangthong 1)	0	0	0	2 (Hongsa 1, Paklay 1)	11
3	Health Centers	New Construction	A	1 (Tonpheung)	1 (Namtha 1)	0	0	0	0	0	0	2
			B	10 (Houayxay 4, Tonpheung 1, Pha-Oudom 4, Paktha 1)	11 (Phoukha 2, Nale 4, Long 5)	5 (Phongsali 2, Mai 2, Khoa 1)	13 (Xam – Tai 7, Houamuang 3, Viangthong 3)	0	0	0	0	39
		Renovation		3 (Houayxay 2, Paktha 1)	2 (Namtha 2)	0	1 (Xam - Tai)	0	0	0	0	6

EQUIPMENT, DRUGS, AND SUPPLIES

Table A10.1: Indicative Village Volunteer Packages

Items	Quantity	Unit cost ($)
• Health education material set	4,800	40
• First aid kit carrying bag with torch	4,800	50
• Basic medicines and supplies like oral rehydration solution, vitamin A, chloroquine, bandage, soap, detergent, contraceptive pills, condoms and record material	9,600	64

Table A10.2: Indicative Village Health Provider Packages

Items	Quantity	Unit cost ($)
• Basic equipment for diagnosis and management of injuries and wounds (like thermometer and scissors); cash box and calculator	1,200	42
• Essential drugs like, analgesic with anti-pyretic, anti-malaria drug, ampicilline, mebendazol, tetracycline eye ointment	2,400	50
• Essential supplies like bandage, disinfectant, bandage, gauze, plaster, alcohol, syringes, suture material, suture needles, gloves size 6.5, scalpel blades no 10, soap and detergent	2,400	30
• Basic reproductive health set including delivery kit, education material, iron, folic acid, vitamine A, contraceptive pills, condoms and soap; and malaria and tuberculosis control drugs	2,400	60
• Administrative supplies like record book, stock register, reordering form and referral slip	2,400	106

Table A10.3: Indicative Health Center Packages

Items	Quantity	Unit cost ($)
• Basic diagnosis equipment such as fetoscope, stethoscope, sphygmomanometer, thermometer, tongue depressor, watch.	57	200
• Sterilization equipment such as pressure cooker, kerosene stove and sterilisation drum	57	300
• Maternal and child care and birth spacing equipment such as delivery table, and intrauterine device insertion set	57	400
• General service materials such as stretcher, flashlight, hurricane lantern, water tank, calculator, etc.	57	500
• Furniture such as tables, chairs, storage cupboards, benches, beds, cash-box, etc.	57	1,000
• Antipyretics, analgesics, antimalarial drugs, antibiotics, eye and ear antibiotics, micronutrients, contraceptives, and antiseptics.	114	300
• Supplies for diagnostic and treatment procedures such as injections, suturing and dressing, and administration	114	80

Table A10.4: Indicative District Hospitals Packages

Items	Quantity	Unit cost ($)
• Basic diagnosis equipment, including obstetric examination set, reflex hammer, ear-nose-throat set	18	7,500
• Laboratory equipment including microscope, blood transfusion equipment, centrifuge, counter differential blood cell etc.	11	5,000
• Sterilising equipment including autoclave	11	2,000
• Obstetric and emergency equipment such as delivery table, delivery set, minor surgery set, minor surgery table and lamp	11 18	8,000 15,000
• Anesthetic and surgical equipment such as operating table, lights, surgical instruments, instrument table, ventilator, aspirator, laryngoscope, oxygen cilinder, etc.	11	22,000
• Generator and other appliances	11	8,000
• diagnostic and nursing care supplies	11	6,000
• basic anaesthetic, obstetric, gynaecological, paediatric, and medical drugs and supplies	11	8,000

Table A10.3: Provincial Hospitals

Items	Quantity	Unit cost ($)
• Basic diagnosis equipment, including obstetric examination set, reflex hammer, ear-nose-throat set	5	15,000
• Laboratory and X-ray equipment including microscope, blood transfusion equipment and centrifuge	5	25,000
• Sterilising equipment including autoclave	5	10,000
• Obstetric and emergency equipment such as delivery table, delivery set, minor surgery set, minor surgery table and lamp	5	20,000
• Anaesthetic and surgical equipment such as operating table, lights, surgical instruments, instrument table, ventilator, aspirator, laryngoscope, oxygen cilinder, etc	5	50,000
• Generator, fans, refrigerator, freezer and other appliances	5	25,000
• Diagnostic and nursing care supplies	8	4,000
• Basic anaesthetic, obstetric, gynaecological, paediatric, and medical drugs and supplies	8	9,000

INDICATIVE TERMS OF REFERENCE FOR CONSULTANTS

International Consultants

Field	Qualifications	Assignments
Chief Technical Adviser (36 person-months)	Public health management or equivalent, at least 10 years experience in primary health care (PHC) development, and preferably speaking Lao.	(i) Assist the project director, coordinators and targeted provinces with project planning, management, procurement, disbursement, and monitoring. (ii) Assist in recruiting, and supervising international and domestic consultants. (iii) Assist in setting up office management and coordination arrangements. (iv) Set up the benefit monitoring and evaluation system for the Project. (v) Ensure compliance with Asian Development Bank (ADB) procedures, reporting, and assurances. (vi) Carry out any other assignments as agreed between Ministry of Health (MOH) and ADB.
Education and Training (6 person months)	Public health specialist with at least seven years experience in developing training programs	(i) Based on previous work, to plan; initiate; and supervise an in-service training program for health staff in the project area of the first component. (ii) Develop a plan to open auxiliary nurses' training schools for ethnic minority students in three provinces, and assist with teacher training and start-up of the schools. (iii) Develop training programs for village health providers and volunteers, pilot test the training modules, train the trainers, and supervise the initial training. (iv) Devise instruments for evaluating the training courses.
Health Sector Management (12 person-months)	Masters degree in business administration or equivalent and at least 10 years experience in health sector management and monitoring	(i) Review relevant systems that have been developed in other PHC activities. (ii) Develop PHC planning, management, and monitoring systems using a consensus building approach among services, programs, and projects. (iii) Prepare guidelines and standard operating procedures for each of the systems. (iv) Introduce systems for planning and budgeting, monitoring, financial management, supervision, procurement, and others as identified. (v) Develop training programs for these and other PHC management systems, pilot test training courses, and train the trainers. (vi) Establish a system for monitoring the use and performance of new systems.
Health Sector Financing (6 person-months)	Masters degree in finance, economics, or equivalent	(i) Guide the hospital financing and expenditures study and designing improvements. (ii) Guide the appraisal of the hospital cost recovery system, propose streamlining based on a financial analysis, conduct a pilot test, and replicate to other hospitals. (iii) Guide the pilot study for the village drug revolving fund. (iv) Guide the feasibility study of risk pooling based on a provincial health subscription system and test a pragmatic design with potential for large-scale replication.
Procurement (6 person-months)	Masters degree in business administration or its equivalent, with at least five years experience in the field of procurement and preferably able to speak and read Lao.	(i) Set up a procurement system for the Project to handle all international shopping and local procurements done at the central and provincial levels. (ii) Build capacity of MOH procurement unit to gradually integrate project procurement. (iii) Prepare detailed procurement guidelines acceptable to MOH and ADB. (iv) Arrange for update of standard lists of goods based on guidelines of MOH. (v) Supervise preparation of detailed specifications and tender documents.

Architect (6 person-months)	Qualified architect with at least 10 years experience in the health sector in developing countries	(i) Develop the design brief and site layout plans for all civil works under the Project, for use of the architectural firm to prepare detailed architectural and building plans. (ii) Evaluate the architectural plans for each construction package submitted by the architect to assure that designs conform to the design brief and site layout plans. (iii) Examine the priced bill of quantities for each construction package submitted by the architectural firm to assure that it has been designed efficiently according to the design brief and site layout plans. (iv) Monitor the tendering, evaluation, and selection process for all construction packages to assure that these conform to the procedures acceptable to MOH and ADB. (v) Inspect all civil works to assure that construction is being done according to the specifications in the tender documents.

Domestic Consultants

Field	Qualifications	Assignments
Education and Training (72 person-months)	Public health expert with at least three years experience in developing training programs and teaching.	(i) Assist in preparing, implementing, and evaluating the in-service training program for health staff in eight provinces. (ii) Assist in developing, supporting, and evaluating the auxiliary nurse training schools for ethnic minority students in three provinces. (iii) Assist in developing, implementing, and evaluating training programs for village health providers and volunteers.
Health Sector Management (72 person-months)	Degree in business administration or equivalent and at least three years experience in developing health management and monitoring systems.	(i) Assist in reviewing planning, management, and monitoring systems that have been developed in previous and ongoing PHC projects in the Lao People's Democratic Republic. (ii) Assist in developing PHC planning, management, and monitoring systems. (iii) Assist in developing guidelines and training program. (iv) Assist in training of trainers, field supervision, and evaluation.
Health Sector Financing (72 person-months)	Economist or financial specialist with at least three years experience in the health sector, including in conducting financial studies.	(i) Carry out a cost analysis of hospitals and health centers. Identify sources, level and conditions of financing and types, level and mechanisms of expenditures. Assist in planning, designing, training, and supervising improvements. (ii) Study the hospital cost recovery system and propose improvements, conduct a pilot test of proposed improvements, and replicate the model to other hospitals. (iii) Conduct a pilot study for the village drug revolving fund; assess the feasibility, capacity requirements, sustainability, equity aspects, and impact of the scheme; and develop a training program, and facilitate replication to the targeted villages. (iv) Conduct a feasibility study of a provincial health subscription system, and test a pragmatic design with potential for large-scale replication.

Accountant (72 person months)	Accountant or equivalent with at least three years experience in managing accounting systems in the health sector	(i) Establish standard accounting procedures and systems satisfactory to MOH and ADB that account for project funds and streamline procedures. (ii) Train the finance and accounting personnel hired for the Project. (iii) Conduct annual audits of project expenditures. (iv) Review all budget requests to assure that these conform to the implementation plans, standard unit costs, and disbursement procedures. (v) Disburse funds to project units according to disbursement procedures. (vi) Maintain records and supporting documentation for all disbursements. (vii) Provide regular reports on advances, disbursements, commitments, and balances as required by the Government and ADB. (viii) Manage documentation for imprest accounts.
Procurement (72 person-months)	Procurement specialist or equivalent with at least three years experience in procurement in the health sector	(i) Prepare detailed procurement guidelines acceptable to MOH and ADB that streamline procurement procedures and guarantee timely arrival of goods. (ii) Prepare standard lists of drugs, supplies, and equipment for each service level. (iii) Prepare detailed specifications and tender documents for all procurements. (iv) Supervise the process of tendering procurements, evaluating bids, selecting winning bidders, and signing contracts for procurement. (v) Make necessary arrangements for duty-free importation of goods and customs clearance for all goods purchased on international procurement. (vi) Guarantee that the quality and quantity of goods received are in accordance with the technical specifications in the tender documents. (vii) Arrange for the transportation and distribution of goods to specified destinations. (viii) Assure that goods have been received at their final destinations in good order.
Architectural Firm (60 months)	Certified supervisor with at least five years experience and six certified inspectors	(i) Assess sites and scope of land preparation and demolition required. (ii) Prepare detailed architectural plans, priced bills of quantity, and tender documents for all construction packages to be tendered under the Project. (iii) Execute the tendering, evaluation, and selection of construction firms for all construction packages for civil works. (iv) Supervise the construction firms carrying out all civil works to ensure quality of materials and work, and timeliness.
Monitoring and Evaluation (72 person-months)	Demographer, statistician, or equivalent with at least three years experience in surveys and monitoring systems in the social sector	(i) Analyze existing monitoring systems; facilitate a consensus building and design process involving all stakeholders; and assist with the design and implementation. (ii) Set up a data collection system for project monitoring. (iii) Design a household survey for benefit evaluation, supervise, analyze, and report.

SOCIAL ANALYSIS AND ETHNIC MINORITIES STRATEGY

A. Ethnic Groups in the Population

1. The current population of the Lao People's Democratic Republic (Lao PDR) is estimated at about 5.2 million people, with a low population density of 21 people per square kilometer. The 1995 census categorizes the population into 47 different ethnic groups, classified in four linguistic groups. These are the Tai-Kadai including the Lao, Phutai, and Leu (66.2 percent); the Austro-Asiatic group of Mon-Kmer and Viet-Muang (23.0 percent); the Hmong-Yao (7.4 percent); and the Tibeto-Burman and Hor Han (2.7). All those not belonging to the Tai-Kadai language group are considered as ethnic minorities. They comprise about 60 percent of the total population of 1.7 million in the eight targeted provinces, as shown in Table A12.1. Vientiane Province is added for comparison.

Table A12.1: Ethnic Groups by Province

Province	Proportion of Ethnic Groups in Province	Proportion Ethnic Minorities
Phongsali	Lao 4,3; Phutai 5,3; Leu 8,9; Kor 20; Phounoy 19,4; Kmu 24,4; Yao 3,3; Ho 4,7 Others 9,7	81,5
Louang Namtha	Leu 15,8; Phutai 12,6; Lao 2,3; Kmu 24,7; Kor 24; Yao 3,3; Hmong 4,4; Others 12,9	69,3
Oudomxai	Kmu 58; Hmong 13.1; Leu 12.2; Others 16.7	83.5
Bokeo	Kmu 23,8; Leu 20.6; Nhuan 4,6; Lao 13.4; Hmong 10,1; Lamet 10,8, Mousseu 6,2 Others 23,9	42,2
Louang Phrabang	Kmu 45.9; Lao 28.6; Phutai 4,8; Leu 3,1 Hmong 15.2, Others 2,4	63,5
Houaphan	Phutai 31.5, Lao 30, Hmong 20.3, Kmu 10,6 Others 7,6	38,5
Xieng Khouang	Lao 44.3, Hmong 34.2, Phutai 10.2; Others 11.3	45,5
Sayaburi	Leu 26.9, Kmu 20; Lao 19, Others 34.1	54,1
Vientiane Province	Lao 63,8; Phutai 14; Hmong 7,6; Kmu 12,5; Others 2,1	22,2

Source: National Census. 1995.

B. Profile of Ethnic Groups

2. The National Statistic Census 1995 indicates that the Tai-Kadai group is better off than the other language groups. The Mon-Kmer are considered poor, and the Tibeto-Burman population very poor. However, dividing populations by ethnic group and place of living masks the large variety of cultures and social organizations within these groups. Several clans, while living in remote mountains, are well organized, opportunistic, and better off. Table A12.2 provides a generalized profile of the four ethnic groups.

3. The Tai-Kadai is the leading group and mostly live in the south and center plains of the Mekong River and its contributors. In addition to having rainfed terraces provide a staple rice supply, they engage in cash crops production, raising animals, weaving, basket making, and sewing. They also dominate the civil service and the commercial sector and make up a large part of the urban population. Migrants from surrounding countries tend to settle in urban areas to engage in commercial and skilled labor activities.

4. The Mon-Khmer represent the traditional inhabitants of the Lao PDR. They usually live on the slopes of mountains, in forests and valleys. They have a more traditional lifestyle of shifting cultivation, hunting, and collecting forest products for their own consumption. If food becomes inadequate or cash is required, they will work as casual laborer for the Lao in the rice fields. The shifting cultivation they practice allows for the forest to regenerate, and usually does not require resettlement. However, resettlement may follow an outbreak of malaria or diarrhea. Most Mon-Kmer are animists and the forests play an important role in their spiritual world.

Table A12.2: Socioeconomic Profile of Ethnic Minorities in the Lao PDR

Groups	Main Location and Access	Economic Activities and Status	Literacy Rate	Cultural Characteristic
Tai-Kadai	Lowland: plains of Mekong River and contributors and main roads	Mostly settled farmers with rice and cash crops, commercial and off farm activities. Generally less poor.	72.9	Buddhists and nonreligious groups, living in large villages with modern lifestyle
Hmong-Yao	Upland: On top of hills; sometimes with road access	Most practice migrant shifting cultivation, partly with cash crops including poppy, forest exploitation, overseas remittances. Poor and nonpoor.	36.9	Animists. Belief in traditional remedies in association with spiritual healing. Favor sons.
Mon-Kmer	Midland: in forests and valleys and along smaller rivers; poor access	Mostly settled shifting cultivation farmers producing dry rice and occasional cash crop with supplementary food from hunting, fishing, gathering and cash from farm labor. Generally poor.	26.5	Strong animists. Early marriages of females.
Tibeto-Burman	Upland: most in forests, some near towns	Subsistence farmers forest exploitation and hawkers. Very poor.	17.0	Strong animists. Early marriages of females.
Others	Mixed	Mixed.	46.8	Mixed.

Source: Social Analysis Report. Project Preparatory Technical Assistance.

5. The Hmong-Yao have mainly settled at high altitude in the northern mountains. They are a relatively better off group. They engage in agricultural and off farm activities, and produce dry rice, maize, ginger, poppy, pigs, and clothes. The Hmong usually practice an environmentally harmful shifting cultivation that forces them to move to a new location. Many Hmong families receive overseas remittances from relatives who migrated to the United States. The Government is trying to resettle Hmong villages by building social services in new locations.

6. The Tibeto-Burman groups, most of whom also live at higher altitude, are considered the poorest. In addition to slash and burn cultivation, hunting and collection of forest products, poverty has increasingly driven them out of isolation and into the marginal commercial activities of towns such as selling firewood. They are few in number and many of these ethnic groups are likely to disappear within the next decades.

C. Distribution of Poverty

7. In a 1995 study, the Word Bank estimated that 46 percent of the Lao PDR population lives below the poverty line of $14 per month, and 27 percent lives below a second poverty line and can be classified as very poor. The study suggests that poverty in the northern area is slightly less than in the south, but recent developments suggest that the south is more rapidly developing than the north. The environment of the population determines to a large extent their living conditions, agricultural productivity, access to services, and development potential. Most of the ethnic minorities are located in poorly accessible areas and have less access to services, as reflected in their education and health status.

8. However, an analysis of a household survey by level of poverty, defined as rice shortage during the last year, indicated that poverty is not confined to remote villages or villages of ethnic minorities. This confirms village studies suggesting that every village, whether remote or accessible, has poor households, and that poverty is linked to social conditions (addiction, single parent, age profile, relatives overseas) and land and labor availability in the individual households. Each village is likely to have some households that cannot produce enough and are trapped in poverty and lack of food. An effort to reach the very poor would therefore need to target individual households, in addition to some specific and small ethnic minorities.

D. Health Needs

9. According to the national statistic census of 1995, the infant mortality rate is 104 deaths per 1,000 live births. The north has the highest infant, child, and maternal mortality rates; and the lowest life expectancy rate. For example, Louang Phrabang province with a 45 percent Mon-Kmer people, has an infant mortality rate of 132 infant deaths per 1,000 live births compared to 72 for Vientiane Municipality. Table A12.3 illustrates the major differences in infant and child mortality among different socioeconomic groups. It suggests major differences in child health status between income, education, and ethnic groups.

10. The maternal mortality ratio in Louang Namtha was 1,595 per 100,000 live births in 1995, implying that the lifetime risk of a woman dying of complications of pregnancy and childbirth is one in 10. About three fourths of deaths occur within six weeks of delivery, and one fourth during pregnancy. Emergency care is often delayed for people living in the hills, as they have poor access to referral services, in particular during the rainy season. The importance of cultural and financial factors affecting referral is not clear. While birth spacing is practiced by 23 percent of couples, there is a high demand for birth spacing services.

11. Malaria, diarrheal diseases, and acute respiratory infections are the major causes of mortality and morbidity in the Lao PDR. Epidemiological variations are associated with the altitude at which people live, with diarrheal diseases being more common in the lowland, and respiratory infections in the highlands, in particular among the Hmong-Mien and Tibeto-Burman groups. Malaria causes high mortality among children and pregnant women in all rural populations. About one third of Lao households experience insufficient food intake. According to a United Nations Children's Fund survey, 41 percent of children are undernourished, and 12 percent are severely malnourished. The risk of malnutrition peaks at 18-23 months. About 20 percent of infants are born malnourished. Iodine deficiency is widespread in the Lao PDR, affecting 65 percent of the population, in particular isolated ethnic minorities without access to iodized salt. Malnutrition is particularly prominent among the Kor and Kmu people.

Table A12.3: Infant and Child Mortality Rate by Socioeconomic Categories

Category	Infant Mortality Rate per 1,000 live births	Child Mortality Rate per 1,000 live births
Ethnic group:		
Tai-Kadai	115	161
Ethnic Minorities	147	230
Place of residence:		
Urban	78	102
Rural	136	200
Family Income		
Well-to-do	82	108
Poor	148	250
Mother's education		
No education	147	207
More than primary education	70	85
Occupation		
Agriculture	128	176
Other occupation	73	94

Source: Fertility and Birth Spacing Survey Lao PDR. 1993. National Statistics Center.

E. Health Demands

12. Differences in health status are associated with variations in living conditions and social services. Table A12.4 suggests that the incidence of illness among ethnic groups is not so different, but that there are major variations in the coverage of essential services, likely resulting in different outcomes. Modern curative care is generally accepted and used if available, except among some remote living populations. Demand for preventive services is still lower among ethnic minorities, perhaps due to less awareness about their benefits. However, with the exception of contraception, the use of preventive services is equally distributed among the poor and nonpoor. Available data show some variations in the demand for health services among ethnic groups. For example, there is more demand for birth spacing and treated mosquito netting among Mon-Khmer groups. The Hmong-Yao give higher priority to the local management of infections. Iodine supplementation is given high priority among the Tibeto Burman group.

Table A12.4: Coverage of Health Education and Services among Ethnic Groups

Indicator	Tai-Kadai	Mon-Kmer	Hmong-Mien	Tibeto Burman
Monthly illness incidence	7	12	9	10
Children 12-23 months fully immunized	38	8	7	21
Women 15-49 yrs who had two doses of TT	65	51	12	38
Children under-five who received two capsules of vitamin A in the last year	38	18	15	37
Women who know about treatment of diarrhea at home	14	8	3	4
Women who know at least one contraceptive method	45	23	7	11
Women not able to read a simple sentence	20	51	87	77
Persons using a bed net at night	98	72	43	44

Source: Project Preparatory Technical Assistance Household Survey.

13. **Sociocultural Barriers.** These are reasons for not attending public health services. Isolated minorities have strong traditional cultural beliefs about ill health and its causes, and prefer the intervention of spiritual healers for many of their health problems. These beliefs vary among ethnic minorities and need to be identified and understood in each situation before interventions can be planned for. Because of strong belief systems, modern health services for certain isolated communities are more difficult to implement. In terms of social barriers, there are major language barriers for females of the Hmong-Yao, Mon-Khmer, and Tibeto Burman groups who do not speak Lao while most staff are of Lao origin and do not speak the local language. This barrier could be overcome by selecting local persons to be trained as a health worker. There is no evidence of major gender differences in accessing services, but privacy of care for women and the presence of female staff are important.

14. **Travel and Opportunity Costs**. Access is a major determinant for the use of services because of the cost of transportation, overnight stay, and lost labor. Improving access will disproportionally benefit ethnic minorities and the poor, as new facilities would be placed where no services are currently available. Physical access in using health services is illustrated in Table A12.5. Ethnic minorities have less access to health centers and district headquarters which have emergency services. The Hmong-Yao and Tibeto Burman groups, about 25 percent of the targeted population, have least access to basic health services, as they often live more than a day's travel from a health facility. At the same time, it is not cost-effective to construct a large number of health centers. The facilities will therefore need to be strategically located to achieve maximum benefit. The villagers are also requesting reactivation of former health workers living in the villages. While nongovernment organizations have been successful in doing this, it needs to be explored if the Government can support such services.

Table A12.5: Access to Health Services (percent)

Indicator	Tai-Kadai	Mon-Kmer	Hmong-Mien	Tibeto Burman
Persons using a government facility first when sick	46	22	23	18
Villages accessible by road	87	53	35	50
Villages within 4 hrs of district headquarter	85	66	45	47
Villages within 1 hr of health center	62	33	9	16
Villages within 1 hr of private pharmacy	79	48	13	26
Villages having a village health provider	96	80	74	56

15. **Cost Recovery**. Affordability is a major constraint to the use of health services. The household survey did not find major differences in health seeking behavior among ethnic minorities, and poor and nonpoor, but it did find major differences in expenditure for illness, which may suggest a difference in quality of care. The poorest household quartile spend an estimated $2.4 per month, compared to $4.2 by the second quartile, $5.0 for the third quartile, and $5.5 for the wealthiest group. However, 55 percent of poor households did not have enough money to pay for health care when a household member became seriously ill compared to 26 percent in the nonpoor group (Table A12.6). Most hospitals have an informal arrangement to subsidize services for those who cannot afford these, but it is not clear to what extent this is adequate. At health center and village levels, staff are reluctant to give discount for drugs to the very poor, as it would be difficult to manage pressures from others for discounted drug prices.

Table A12.6: Affordability of Health Services (percent)

Indicator	Tai-Kadai	Mon-Kmer	Hmong-Mien	Tibeto Burman
Households making health expenditure during last month	45	57	41	33
Villages with a mutual fund	76	52	23	22

Source: Project Preparatory Technical Assistance. Household Survey.

16. The introduction of cost recovery for drugs has increased outpatient utilization, except by civil servants. The reason is that drugs became available. For the Lao-Phoutai, the price of drugs and treatment is an important determinant in the choice between public or private services where both are available. The price of drugs and treatment may also affect the choice between modern treatment and traditional healing. Modern treatment may be more of a problem for the Mon-Khmer and Tibeto Burman who are poorer, and for the very poor in most villages. Many patients may not be able to afford inpatient care on the basis of full cost recovery. Many patients will not have enough cash to pay for services in an emergency. Hence, the Government has an important role to ensure that inpatient care for catastrophic illnesses such as complications of pregnancy and childbirth are available and affordable for the poor.

17. **Community Support**. Hospital staff use an informal system to determine whether a patient should receive subsidized care or not. This is more difficult at health center level, as health center staff are concerned that many patients will demand subsidized care and will complain if they do not receive it. Besides, it will be difficult for health staff to determine who is very poor. The most viable option at present seems to be to make the community responsible for identifying and supporting the very poor, in return for Government subsidy for the community. However, the tradition of communities supporting their members appears to vary. The Tai-Kadai and Mon-Kmer often receive support from family members for health care, while the Hmong-Mien and Tibeto-Burman depend more on the sale of household goods. The Hmong-Mien and Tibeto-Burman groups also have less access to mutual funds than the Tai-Kadai and Mon-Kmer. This suggests that community support for the very poor may be more difficult to organize among the Hmong-Mien and the Tibeto Burman groups. In some communities, an informal mutual fund or credit system is used to allow households to pay later for services, allowing time to arrange for contributions from relatives or sale of livestock or other assets. Formalizing such a system is being studied in Borikhamxai Province with the help of the German Technical Cooperation (GTZ). In this pilot project, the village committees were asked to look after the very poor and make adjustments for inflation. Despite high inflation and high level of poverty in some villages, most village committees managed to do so.

18. **Community Perceptions**. In 1998, a study documented the perceptions of local leaders and community health workers regarding the quality of care at public health centers. The study was carried out in two northern provinces, Xieng Khouang and Oudomxai, with 70 percent ethnic minorities. Out of 1,762 households interviewed in 97 villages, 62 percent were using a public health center. Patients using the facilities indicated that, as they travel for a long distance, it is important that the health center has drugs available. The price of drugs was generally acceptable, being less than from private sources. The proportion of patients unable to pay for drugs at a health center is believed to be small, and those who do not have the cash are generally allowed to pay later. Thirty one percent of the patients reported that they did not always find staff at the health center. Health workers were generally polite to patients (85 percent). No cases of informal payments were reported. Local leaders were asked what they would like to see improved in the health centers. A summary of recommendations is in Table A12.7.

Table A12.7: Recommendations of Local Leaders to Improve the Quality of Services

Services	24 hour services; outreach services for pregnant women and birth spacing; privacy for delivery; promotion of healthy lifestyle; and advice on pit latrines.
Staff	At least one better trained staff in a health center; health workers with hill-tribe background; female workers for family planning services.
Facilities	Better water supply, and more space for inpatient care
Drugs	A larger variety of drugs; drugs for emergencies; syrups for children; clear drug pricing guidelines; reduced drug prices; proper instructions on the use the drugs.

Source: ADB PHC Project. Perception of Health Services Survey. 1998.

19. **Staff Perceptions**. Health workers were asked in structured interviews about their perceptions. Of 27 health workers interviewed, 18 were willing to remain or stay longer in the health facility. More than half the health workers were satisfied with living conditions. The reasons mentioned were (i) living in own area, (ii) local authorities provide strong support, (iii) provision of land and house, (iv) expecting to get employment (for contract workers), and (v) community appreciation. About 20 percent of health workers indicated they faced difficulty in the health center. Reasons given were (i) lack of notification and information about the length of the assignment, (ii) not being from the area, (iii) lack of attention from local authorities, (iv) family problems, (v) lack of refresher training, (vi) the health center being far way from any community, (vii) no rewards for working in a remote and difficult location, and (viii) the land provided not being arable. Most health workers agreed that outreach activities are very important, but only 9 of 27 health workers had done these, and only 3 of them regularly. Reasons for not going on outreach are heavy workload, lack of staff to run the health center, and discomfort with doing a field visit alone.

F. Ethnic Minorities Strategy

20. The Project proposes four strategies to increase access of ethnic minorities to PHC:

(i) increasing physical access by targeting ethnic minority populations,

(ii) making services appropriate to the needs of the ethnic minorities,

(iii) making services socially acceptable through training and participation, and

(iv) improving affordability of services through new financing arrangements.

.

21. **Accessible Services**. The Project is aiming to expand primary health care (PHC) in the northern region, where ethnic minorities constitute about 60 percent of the population. This is the poorest region in the country. Extensive mapping of communities and services is ongoing. The provincial steering committee will plan for providing health facilities near ethnic populations. Placing new facilities near ethnic populations will be balanced with considerations of operational feasibility and cost-effectiveness. To improve accessibility for remote communities, the Project will increase outreach services and village-based care and promotion. The targets are in Table A12.8.

22. **Appropriate Services**. The Project will provide packages of interventions, training, and drugs that address the common health problems of particular ethnic minorities, e.g., the initial management of pneumonia and iodine deficiency at village level for the high altitude populations, and training of birth attendants among those tribes using these services. Where

feasible, a medical assistant will be posted so that a wider range of services can be made available. The project facilities will also provide accommodation for overnight stay for patients living far away. Opening hours of services will be extended to provide better time coverage.

Table A12.8: Targeted Villages by Ethnic Group

Province	Total Population	Ethnic Population	Total Targeted Villages	Estimated Ethnic Villages
Phongsali	53,490	Kor 21,390	231	Kor 92
		Phounoi 18,180		Phounoi 78
		Kmu 12,830		Kmu 55
		Hmong/Yao 283		Hmong/Yao 3
		Others 122		Others 3
Louang Namtha	40,150	Leu 20,475	168	Leu 85
		Kor 9,635		Kor 40
		Kmu 9,635		Kmu 40
		Hmong/Yao 283		Hmong/Yao 2
		Others 122		Others 1
Oudomxai	147,150	Kmu 85,350	560	Kmu 324
		Hmong 19,130		Hmong 78
		Leu 19,130		Leu 67
		Others 23,540		Others 91
Bokeo	39,760	Kmu 13,520	242	Kmu 82
		Leu 8,350		Leu 48
		Lao 5,170		Lao 31
		Nhuan 6,360		Nhuan 36
		Hmong 2,390		Hmong 15
		Others 3,970		Others 30
Houaphan	85, 630	Phoutai 26,545	322	Phutai 103
		Lao, 25,690		Lao 96
		Hmong 17,980		Hmong 67
		Others 15,415		Others 56
Xieng Khouang	140,430	Lao 61,790	350	Lao 154
		Hmong 17,980		Hmong 122
		Phoutai 15,450		Phoutai 39
		Others 15,430		Others 35

The target population is estimated based on the percentage of each ethnic groups indicated in the National Statistic Population Census 1995.

23. **Acceptable Services**. For each ethnic group, specific cultural issues will be identified at the local level, where necessary through additional studies, and incorporated in the local design for making services more acceptable. The provincial steering committee will ensure that this is done for each targeted district as part of the annual provincial plan. The Project will also redistribute staff speaking the local language and train additional persons belonging to the ethnic monitories as auxiliary nurses and village health providers. Training targets are in Table A12.9.

24. **Affordable Services**. To improve financial access, the Project will set up a drug revolving fund at the village level that will provide drugs at a cost lower than that provided by the private sector. Given the problems identified in providing subsidy or discounted services to the very poor, community organizations will be asked to make arrangements to assist the very poor

as the communities' contribution to establishing the drug revolving fund. The improvement of access of health services will also make services more affordable, as travel and opportunity costs will reduce. Options for using the village mutual funds as a post-payment system and making hospitals services more affordable will be explored.

Table A12.9: Training Targets for Village Health Workers and Health Staff

Province	Ethnic Group	No. of Village Health Workers to be Trained		Number of Health Staff to be Trained	
		Total	Female	Total	Female
Phongsali	Kor	106	32	34	10
	Phounoi	90	45	22	11
	Kmu	63	31	16	8
	Hmong/Yao	3	1	2	1
	Hor	3	1	2	1
Louang	Leu	58	29	14	7
Namtha	Kor	42	12	14	4
	Kmu	43	21	14	7
	Taidam	36	18	9	4
	Hmong/Yao	8	2	1	0
	Laohouay	7	1	1	0
Oudomxai	Kmu	373	186	92	46
	Hmong	83	25	28	8
	Leu	83	41	20	10
	Hor	40	12	14	4
	Phoutai	30	15	8	4
	Others	40	12	14	5
Bokeo	Kmu	52	26	13	6
	Leu	44	22	11	5
	Nhuan	23	11	6	3
	Lao	20	10	5	2
	Hmong	9	4	2	1
	Kui	6	1	2	0
	Others	4	1	8	2
Houaphan	Phoutai	114	57	28	14
	Lao	111	55	28	14
	Hmong	74	22	26	8
	Taidam	37	17	9	4
	Others	34	10	11	4
Xieng	Lao	177	88	44	22
Khouang	Hmong	137	41	46	14
	Phoutai	41	20	10	5
	Kmu	16	8	5	2
	Others	33	10	11	3

BENEFIT MONITORING AND EVALUATION

1. The purpose of the benefit monitoring and evaluation system is to (i) provide essential, accurate, timely, and systematized information on the quantitative and qualitative performance of the Project components; (ii) ensure that problems and opportunities are identified, analyzed, shared, and responded to in a timely manner; and (iii) make the Project's impact known one year after completion of the Project. The indicators will be based on the concept of input, process, coverage, and impact. Inputs include hardware and software including policies and guidelines. The process refers to the quantity and quality of activities performed. Output refers to the product of the services and management as measured at the point of delivery and included utilization of services, a key indicator of this Project, and client satisfaction (patients, staff, others). Coverage refers to the proportion of a population having used a particular service, e.g., the proportion of children immunized or couples using modern contraceptives. Impact refers to the change in the health status within the targeted population, e.g., reduction in infant mortality rate and fertility.

2. Component 1, improved access to quality primary health care (PHC), will be monitored for inputs, process, and output indicators using an improved version of the existing health information system. The provincial health office will be assisted to strengthen the provincial monitoring system for health services. In addition, a health facility survey will be done at the beginning, at midterm, and on completion of the Project. The survey will include an assessment of training needs and staff skills. This will be supplemented by spotchecking of facilities, covering all facilities each year, as part of supervision. A standardized checklist will be used for yearly aggregation, similar to the one being used for the facility survey. For village-level activities, simple activities and supply request forms will be used (visual for birth attendants, as most are illiterate). Beneficiary perceptions will be obtained through focus group discussions at village level and exit interviews during health facility surveys.

3. The Project will rely on its own household surveys to assess coverage and impact, including a baseline survey in eight provinces (six project provinces and two controls) the first year of project implementation, a midterm survey in three selected provinces before midterm review scheduled toward the end of year three, and a repeat survey in the eight provinces in year six. The survey will follow the World Health Organization (WHO) standard cluster survey used for immunization. It will be of sufficient size to measure the more frequent phenomena such as infant mortality for each province. Maternal mortality will be monitored separately from census information. Special studies will be done to probe into determinants of use of services.

4. Component 2 mainly involves systems development and capacity building and will be monitored in terms of products, activities of the provincial health offices, and use of the products by the health services in all provinces. For this purpose, the provincial project implementation offices will each month complete a separate primary health care management monitoring form. The project management office will be responsible for aggregation of the information of the 18 provinces. Qualitative studies will be carried to probe deeper into some of the reasons for poor or good performance.

Table A13.1: Estimated Baseline Values and Targets in 6 Provinces

Indicator	Baseline 2000	Target 2006	Source
Impact			
Crude Birth Rate/1,000 persons	41	36	Survey
Infant Mortality Rate/1,000 live births	104	75	Survey
Maternal Mortality Rate/100,000 live births*	490	355	Census
Coverage			
Contraceptive Prevalence Rate	23 percent	45 percent	HHS
Households Using Iodized Salt	67 percent	90 percent	HHS
Children under Five Sleeping under Treated Mosquito Nets	14 percent	35 percent	HHS
Eligible Children Fully Immunized	32 percent	68 percent	HHS
Output			
Health Facility Attendance	(Baseline)	40 percent increase	HIS/HFSS
MCH-FP Attendance	(Baseline)	60 percent increase	HIS/HFSS
Village Health Care Providers Attendance	(Baseline)	Double	HIS/HFSS
Hospital Deliveries	10 percent	20 percent	HIS/HFSS
Process			
Health Centers with MCH-FP Services	20 percent	50 percent	HIS/HFSS
Village Visits by Quarter	10 percent	60 percent	HIS
Villages with Functioning Village Health Committees	5 percent	40 percent	HIS
Number of District Hospitals for Major Surgery	2	8	HIS
Supervision Visits by Quarter	30 percent	80 percent	HIS
HIS Reports Received	50 percent	90 percent	HIS
Inputs			
Number of Village Health Providers Trained	0	1200	PIO
Number of Ethnic Minority Staff Trained	0	100	
Number of Health Centers Equipped	0	50	PIO
Targeted Health Center Kits Supplied/year	0	85	PIO
Targeted Drug Revolving Kits Supplied/year	0	70	PIO

* Maternal Mortality Rate, actually a ratio, is difficult to measure and not a good indicator to measure project impact. Another indicator may be used instead. The baseline value is the official estimated rate for Lao in 2000.

HHS - household survey; HIS - health information system; HFSS - health facility survey and spotchecking; MCH/FP - maternal and child health and family planning; PIO - project implementation office.

Table A13.2: Indicative Supervisory Checklist for a Health Center

District Supervision Report			Date of visit:
	Name of supervisor		Previous visit:
	Name of health center		Date report:
Staff and Clients			
	Sanctioned positions		
	Staff posted/present		
	Reasons for absenteeism		
	Training attended in last year		
	Team work/staff problems		
	Comments of patients	Hours of service, staffing, attitude of staff, supplies, satisfaction	
Knowledge and Skills Check		**Asks and explains about:**	
	Malaria	Use of impregnated bednet, where to get, signs of malaria,	
	Respiratory infection	Danger signs like high fever, quick breathing, coughing blood,	
	Diarrhoea	Danger signs of diarrhea, what to do, how to prevent	
	Anemia	Balanced diet, iodiZed salt, vitamin A, worms, provide treatment	
	Family planning	Family size, birth spacing method and desire, methods,	
	Pregnancy	Previous pregnancies, danger signs, what to do, supplements	
	Immunization	Immunization status, what is needed and why, how to get	
	Data recording		
Field Visits/Outreach			
	Field trips	Village committee meetings; topics discussed/agreements;	
	Training	Village health care providers and volunteers trained;	
	Kits supply	Village health care provider supplied;	
	Reporting	Village health care providers reporting	
Eqipment and Supplies			
	Curative care	Register of patients, price list, essential drugs in stock	
		Stethoscope, thermometer, soap	
	MCH/FP services	Register of clients, MCH/FP cards, education materials, supplies	
		Weighing scale, foetus-scoop, delivery bed, torch	
	Inpatient care	Beds, mattresses, blankets, iv fluids, emergency tray, ambu bag	
	Outreach services	Transport, per diem, drug kits in villages	

ECONOMIC ANALYSIS

1. This appendix summarizes the Project's economic rationale and benefits, including an analysis of the cost-effectiveness, and assesses the Project's financial sustainability and benefits.

A. Economic Rationale

2. The Project will improve (i) the health status of about 0.9 million people living in six project provinces by helping to expand and improve primary health care (PHC) services, and (ii) referral services for 1.7 million people living in the eight northern provinces. The interventions are targeted specifically at the poor and ethnic minorities (both about 60 percent of the target population), and address conditions that impose a large disease burden such as malaria, respiratory infections, diarrhea, and micronutrient deficiencies. The Project will address problems that account for more than 30 percent of the burden of disease for women and children, in particular reproductive health care. The Project will protect children during a vulnerable time in their lives, thus improving their intellectual and psychomotor development.

3. The economic rationale for public intervention in PHC service is strong and well established. First, PHC services, especially immunization, are mostly public goods or have large positive externalities, and will not be adequately provided by the private sector. Second, PHC services are marked by informational imperfection, e.g., long-run effects of early childhood or mothers' health status, leading to low levels of demand, and poor supply response from the private sector. Third, the failure of insurance markets for basic health care, e.g., delivery complications, puts poor households at high risk of catastrophic expenditure and this risk can be significantly reduced by improved public PHC. Fourth, PHC services can contribute significantly to poverty reduction among the less endowed segments of the population, and therefore, there is a redistributive and safety-net rationale for public intervention. Finally, PHC services can be provided publicly in a relatively inexpensive and sustainable manner under an appropriate delivery design and financing arrangements.

4. The project preparatory technical assistance (PPTA) household survey found that the average household expenditure is about $6.70 per person per year, and 77 percent of this is spent on drugs. This shows little room for average households in the project areas to spend on preventive health care, unless supported by public sector intervention. Their overall health needs would be better served by spending more of their time and limited financial resources on preventive care than curative care. The market failure in PHC services is exacerbated by the remoteness of the population and the quality gap between the beneficiaries' expectation and available supplies. Major findings of the household survey indicate that (i) the ethnic minorities are in more remote and less accessible areas than the majority Tai-Kadai group; (ii) the accessibility to services and preventive outcomes are lower in ethnic minorities; (iii) the disease burden is slightly higher for ethnic minorities; and (iv) the literacy rate and level of health knowledge among ethnic women are very low. These suggest the need for public intervention to enhance knowledge and therefore realize potential demand for PHC services on the demand side and improve access and quality on the supply side. Based on the experience of the first PHC project, the Project will improve the efficiency of PHC service delivery in rural areas by rationalizing the spatial distribution of physical facilities according to topography, population density, population growth rates, and proximity to the poor and ethnic minorities. Also, the Project will concentrate on the provision of services that are either public goods or have large positive externalities, such as the prevention and treatment of contagious diseases.

5. The PPTA village survey found that village health care providers (VHPs) are present at a high rate among all ethnic groups (the minimum is among Tibeto-Burman group, with one VHP in 56 percent of villages). However, they need some incentive and training to take on PHC services to serve villagers effectively. The Project will reach out to these VHPs and enable their participation in the provision at the grassroots level. Due to the absence of private sector providers of PHC services and also near-absence of private health services, except sellers of drugs, the Project is not likely to infringe on activities of private sector providers. Conversely, the Project is likely to enhance the awareness of rural population about the importance of health care in general, leading to higher willingness to pay for health care, which may result in attracting better-quality private providers of basic curative services.

6. Another market failure aspect, economies of scale of health information provision and supervision, will be addressed by the Project's support for the establishment of new PHC coordination units at the central, regional, and provincial levels. Many external agencies and nongovernment organizations are conducting a wide variety of PHC activities at every level of the network, and the Project will enable the Ministry of Health (MOH) to coordinate and orchestrate these current activities and plan for further expansion of the PHC network, in accordance with the PHC policy. Especially, standardization and implementation of PHC management information systems such as health information and cost recovery reporting systems will help exploit the economies of scale or scope, and improve efficiency.

7. The Project has been specifically designed to reduce poverty by meeting the health needs of the rural poor and ethnic minorities. While the Project aims to provide preventive services to all segments of the population in the project provinces, the poor will receive a disproportionate benefit by getting better access to services at a lower cost. The Project will further streamline cost recovery mechanisms to improve cross-subsidy to the very poor. The Project will provide for PHC targeted services to the poor as a result of several design features such as VHP mobilization, training support for indigenous people to become auxiliary nurses, and local contribution to staff houses at subdistrict health units. The Project also has been designed to benefit women. Women will constitute a priority group of the Project beneficiaries, with specific interventions aimed at improving women's health (e.g., birth spacing, supplies of contraceptives, and mobile teams to assist delivery emergency).

8. Overall, the Project focuses its resources on proven high health impact, cost-effective interventions for reducing morbidity and mortality. At the same time, the Project will explore innovative financing options at various levels. The PPTA social analysis indicates high willingness to share costs of health services but the willingness to pay is linked with the quality of services provided. The Project includes development of cost recovery and incentive systems at the provincial hospital level to explore improved financing of better-quality basic referral-level services, which will in turn enhance the user trust in the PHC network as a whole.

B. Economic Benefits

9. Through a number of channels, the PHC expansion will bring about economic benefits by improving the health status of children and adults (especially women) by decreasing morbidity and mortality. For example, improvement in health status will lead to: (i) enhance the human capital base and labor productivity of the country's workforce; (ii) increase the future savings rate and capital formation by reducing the household health care expenditures; (iii) improve physical and intellectual development, thereby increasing returns to education for children; and (iv) allow the poor to escape from the vicious loop of low health status, large number of children, low educational input, and low productivity.

C. Cost-Effectiveness Analysis

10. Cost-effectiveness of health interventions is often measured as cost per disability adjusted life years (DALYs) saved. A DALY is a measure that combines mortality, morbidity, and disability weighted for years of life saved at different ages, with social preference in favor of working-age years reflected in the implicit weights. Despite limitations, DALYs provide a quantification of the burden of disease comparable across alternative health interventions and are increasingly used in developing countries. For the purpose of analysis, DALYs are used to indicate the current burden of disease from a selected set of medical conditions addressed by the Project. For accuracy, DALYs should be calculated from data specific to the country. The requisite data for these calculations is not yet available in the Lao People's Democratic Republic (Lao PDR), and a second-best approach for the estimation of DALYs has been taken.

11. The greatest difficulty in economic analysis of health projects lies in the uncertainties of the reduction of disease burden, or saving in the otherwise lost DALYs every year in this case, specifically accruable to the Project. The incremental DALYs saved due to the Project also depend on the assumed counterfactual scenario without the Project. For the current Project, PHC services are targeted primarily to the poor and the new pricing policy on medical fees and consumables will not significantly influence the target population's use of the PHC services. Here, the "before-project" baseline health situation is simply taken as the "without-project" situation and different scenarios (low, moderate, and high) have been prepared to test the robustness of cost-effectiveness indicators to different effective PHC coverage of the target population. The low scenario assumes that the percentage of the target population reached and full impact of the PHC intervention on mortality and morbidity realized will gradually increase to 10 percent during the project implementation and stay so thereafter. The moderate and high scenarios assume the percentage will gradually increase to 15 and 20 percent, respectively, during the project implementation period and stay so thereafter. The project life is assumed to be 15 years, beyond which the project investments will cease to yield health benefits and leave no residual value.

12. Both financial and economic costs per DALY saved are calculated based on a range of assumptions and conversions described in the main text. The Project's costs stream and output (DALY saved) streams are summarized in Table A14.1.

Table A14.1: DALYs Saved

Financial Cost per DALY saved		Economic Cost per DALY saved	
Low Scenario:	$49.02/DALY	Low Scenario:	$45.82/DALY
Moderate Scenario:	$30.08/DALY	Moderate Scenario:	$28.11/DALY
High Scenario:	$22.56/DALY	High Scenario:	$21.09/DALY

ADB's *Policy for the Health Sector* lists costs per DALY saved for some comparable health interventions as follows: immunization at $25, family planning at $25-75, malaria prevention using impregnated mosquito nets at $15-20. The high scenario cost is considered well within the acceptable range compared with the international norm. The low scenario cost is somewhat higher than the international comparator, which may be explained by the assumptions regarding the cost of services, in particular family planning services, which appears quite high, and the geographical condition in the Lao PDR. This would justify relatively higher cost per DALY saved.

D. Financial Sustainability

1. Fiscal Impact

13. Health sector projects are normally net users of government income. The magnitude of their fiscal impact must be put in the context of the total government health budget to establish whether there is a financial gap that must be bridged either by higher taxation, borrowing, or user charges. Fiscal affordability of the recurrent project expenditure needs especially to be established. Such analysis should ideally be broken down to the smallest budgetary unit. For the Project, an attempt has been made to assess the financial sustainability by province. The current Project is unlikely to be subject to a major fungibility problem.

14. Upon completion of the physical investments, the average annual recurrent expenditure needed to sustain the Project activities is estimated at $245,500, comprised of maintaining costs of buildings, equipment, and vehicles, and operational costs of supervising health care workers at rural health units and VHPs. This amount is broken down by province as in Table A14.2. Also, using the 1997/98 expenditure data as a guide (data from more recent years have not been obtainable from the Government), annual health sector recurrent expenditure by province was estimated as shown in the table. Although it is difficult to predict with precision, the overall incremental recurrent costs associated with the Project is estimated to be about 8 percent of the annual government health expenditure. The overall prospect for sustainability is favorable as MOH has committed to allocate more budget to promotive and preventive services, although the risk of macroeconomic instability will be beyond MOH's control, as has been observed during 1997-1999. The six provinces with a comprehensive development program will require 10-16 percent incremental recurrent costs to sustain project activities.

Table A14.4: Recurrent Cost and Budget Projection by Province

($1000 Costant 2000 Prices)	2004	2005	2006	2004-6 Average	1997/98 Estimated Recurrent Health Expenditure	Adjusted to 2000 by 3.7Percent International Inflation	Project cost Percentage Share in the Budget
Bokeo	20.9	16.2	19.0	18.7	111.5	115.6	16
Louang Namtha	20.1	18.5	17.9	18.8	178.0	184.6	10
Phongsali	16.1	15.4	13.7	15.1	124.6	129.2	12
Houaphan	18.8	17.4	16.7	17.6	169.1	175.3	10
Oudomxai	25.9	23.4	23.9	24.4	189.7	196.7	12
Xieng Khouang	23.4	20.9	22.1	22.1	162.9	168.9	13
Louang Phrabang	14.0	11.6	12.3	12.6	297.5	308.5	4
Sayaburi	7.2	7.5	7.9	7.6	229.4	237.8	3
Other Provinces and Central MOH	101.5	125.2	98.9	108.5	1,345.0	1,394.8	8
Total	247.9	256.2	232.4	245.5	2,807.5	2,911.3	8

2. Cost Recovery

15. In addition to the Government assurance that public health expenditures will be maintained or increased in real terms, the Project employs the following specific mechanisms to increase the likelihood of financial sustainability.

(i) increased cost recovery revenue from those able to pay, through more accurate pricing of services based on total costs of goods and service provision;

(ii) increased cost recovery revenue from more accurate replacement cost pricing to keep up with inflation for drugs and other medical consumables;
(iii) public-private partnerships with VHPs for revolving funds with full replacement cost pricing;
(iv) increased cost recovery revenue from the pricing of hospital services, which currently are not routinely charged for;
(v) increased retention of cost recovery revenue by exempting public health sector revenue from provincial taxes; and
(vi) increased revenue from provincial health services subscription system to reduce the financial risks of hospitalization and chronic illness.

16. Since Prime Minister Decree 52 was implemented, cost recovery systems for drugs, other medical consumables, and services have been moving from an experimental stage to a more developed and systematic approach in the more advanced central and regional hospitals. Cost recovery in these hospitals is substantial and increasing. Currently, fees are charged for drugs, treatment, laboratory tests, x-rays, hospital rooms, medical supplies, and documents in central, regional, provincial, and some district hospitals. Drugs are paid into revolving drug fund (RDF) at virtually every level of the public health care system. The level of cost recovery through RDF and fees collected for medial consumables and services averages about 60 percent of revenue at major hospitals, and about 36 percent at successful district hospitals. Smaller and remote provincial and district hospitals are thought to recover lower percentages of operating costs. (Findings from facility visits during the fact-finding mission are available upon request.)

17. Using secondary data in reports on the number of outpatients and inpatients at representative provincial and district hospitals, the PPTA social analysis attempted a rough quantitative analysis of use to cost recovery adoption. The analysis found that in all hospitals for which the data were collected, implementation of RDFs were associated with better quality drugs and lower cost than available in private pharmacies.

18. Some groups in the population are more sensitive to the implementation of cost recovery systems. These groups are the poor, women, children, and ethnic minorities. Data collected at Pak Ou district hospital in Xieng Khouang province, specifically for outpatient visits, show that an increased use by each group after RDF was implemented in 1995. Thus, RDF did not lead to a fall in use by sensitive groups. Regarding the variation in use among different groups, most of the Mon-Kmer and Hmong-Mien villages are in the remotest zone and the first barrier to access for these ethnic groups is geographic. Use by these groups is less sensitive to a variation of service quality at the hospital.

19. Initial experimentation with RDF led to some failures, but these failures taught valuable lessons, including the needs: (i) to establish and enforce simple accounting systems, (ii) for training, especially at the district and lower levels in the accounting system; (iii) for oversight for pricing and procurement by a capable, trained fund manager in PHOs; (iv) to price drugs based on drug cost, to safeguard against inflation; and (v) to stockpile drugs and other supplies, not money. Regarding treatment fees, there are also lessons to be learned. Although the current government policy encourages treatment fees to be charged for professional medical services, very few hospitals do so. This, combined with low salaries for medical professionals, discourages doctors, nurses, and other trained personnel from dedicating themselves to public hospital duties, and encourages them to take second jobs to supplement their income.

20. The prices paid for drugs, medical consumables, and other items in public hospitals and health centers are based on the cost to buy the supplies. As far as the provincial and district hospitals visited by the fact-finding mission, charges for various services including the markup

for drugs (25 percent markup on drugs: 5 percent for logistics and transportation; 10 percent for lost or stolen drugs; and 10 percent for administration costs) appeared to be more or less uniform. However, on the "tax" side, the PPTA report indicates that there are different interpretations of the decree.

21. Under Decree 52, hospitals are supposed to identify the poor on the basis of a card or document issued by the Ministry of Labor and Social Welfare or by the village head. However, the administrative costs of "means testing" systems outweigh the benefits of collected fees from those who actually pay. In the Lao PDR, a common sense approach that minimizes costs and protects the poor is being used at most of the major hospitals examined. This informal system appears to have evolved on its own merit, and in the short to medium run, seems to be the only feasible option given the current lack of official proof of the income level and high administrative costs and management capacity required for systematic document-based formal system. However, in the long run, a document-based transparent system will be necessary.

22. A detailed design for the proposed cost recovery measures will be studied and pilot tested during project implementation under the financing option component. (Preliminary terms of reference are available upon request.) Basic principles for cost recovery have been prepared.

23. The Government will have to provide subsidy to most of the PHC services in the medium term as only limited revenue can be raised even from the nonpoor in the Lao PDR. For example, a living allowance for staff at subdistrict health centers will have to be provided by the Government, while drug supply will primarily be financed through cost recovery and Government subsidy in case of unexpected depletion. In the long run, risk-pooling schemes should be expanded so that health financing becomes more self-sustainable without Government subsidy.

24. MOH has proposed that the 20 percent "tax" be abolished so that 100 percent of cost recovery revenue can be retained at the point of collection. Taxing nonprofit entities seems to have little rationale. The appraisal mission could not confirm the specific use of these taxes. The collected taxes probably go back to the general Ministry of Finance coffer and no earmarking is done. Even if the Government's purpose is to use the collected tax solely for PHC and preventive care, it would still be more efficient and reduce administrative costs to retain them at the point of collection and supervise the hospitals and accounting staff to direct the money for specific purposes such as maternal child care and family planning. This issue needs follow-up during the project implementation.

E. Poverty Impact Analysis

1. Poverty Incidence

25. Although the Lao PDR is generally recognized as one of the poorest countries in the Asian and Pacific Region, consistent data are not available to properly establish the country's poverty line and poverty incidence. The Government has yet to decide upon an official poverty line. Two poverty lines developed by the World Bank and the Swedish Statistics Office give conflicting results on poverty incidence. The PPTA household survey chose rice shortage (whether the household had enough rice during the last year) as an indicator of poverty. Field surveys found that poverty in rural villages in the Lao PDR in subsistence production is mainly linked with lack of workforce and land shortage. Lack of both combined is best reflected in rice shortage. But this does not allow comparison between provinces and regions. The Asian Development Bank study in May 2000 attempted to make the calculation of poverty line consistent between the 1992/93 Lao Expenditure and Consumption Survey (LECS1) and the

1997/98 update (LECS2) based on which the average total poverty line for the Lao PDR is estimated to be KR20,911 per person per month in 1997/98 prices (about $9 as opposed to the World Bank criterion of $14). Taking this poverty line for the current analysis, poverty incidences in the target provinces are given on Table A14.3.

Table A14.3: Percentage of Poor by Province

	1992/93	1997/98	Change	Number of Districts with Majority Poor
Bokeo	70.4	51.0	-19.4	3 out of 5
Louang Namtha	74.3	66.8	-7.5	3 out of 5
Phongsali	94.8	71.7	-23.1	6 out of 7
Houaphan	90.7	81.3	-9.4	6 out of 6
Oudomxai	70.8	77.5	6.7	7 out of 7
Xieng Khouang	72.8	42.5	-30.3	4 out of 7
Luang Phrabang	81.9	61.2	-20.7	8 out of 10
Sayaburi	50.6	31.9	-18.7	3 out of 10
Lao PDR	62.7	46.9	-15.8	74 out of 128

26. There was a remarkable reduction in poverty incidence during the mid-1990s. Although the rich seem to have benefited more than the poor, the benefits of economic growth have effectively trickled down during this period. Among the four regions of the country, the northern region has the highest poverty incidence at 61.7 percent (down from 76.5 percent). The poverty incidence in Vientiane Municipality has been the lowest at 8.4 percent (down from 27.4 percent). The numbers for the central and southern regions are 42.4 percent (down from 59.5 percent) and 53.5 percent (down from 67.6 percent), respectively. In addition to this large variation between regions, there are also differences between provinces. Among those with the highest poverty incidence are the project target provinces such as Phongsali, Houaphan, and Oudomxai. The differential performances in the reduction of poverty incidence appears to be associated strongly with the degree of access to markets, including overseas markets, in the PRC, Thailand, and Viet Nam.

2. Differential Project Impact

27. The percentages of the poor in the above Table A14.3 can be considered an approximation of a “poverty impact ratio” based on population headcount in the target provinces; thus, 62 percent of the project benefits are considered to go to the poor. But this simple interpretation assumes that the burden of diseases are distributed in a simple proportion of the population and the project services are used by everyone equally. In reality, the Project is very likely to benefit the poor more than this number indicates, because (i) the burden of disease is more than proportionately affecting the poor, (ii) the analysis found that poverty is not linked with the degree of remoteness of villages, and (iii) project services at lower level health facilities will create access to the poor who cannot currently afford the travel cost and effectively constitute economic subsidy targeted at them.