Report to the Government

Actuarial assessment of the national health insurance system in Lao People's Democratic Republic

Regional Actuarial Services Unit, Decent Work Technical Support Team for East and South-East Asia and the Pacific, Bangkok

ILO Country Office for Thailand, Cambodia and Lao People's Democratic Republic

International Labour Organization

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Abbreviations and acronyms

CBHI	Community-Based Health Insurance
CPI	Consumer Price Index
GDP	gross domestic product
IMF	International Monetary Fund
IPD	Inpatient Department
LSB	Lao Statistics Bureau
LSSO	Lao Social Security Organization
MLSW	Ministry of Labour and Social Welfare
MOH	Ministry of Public Health
NHI	National Health Insurance
NHIB	National Health Insurance Bureau
NSSF	National Social Security Fund
OPD	Outpatient Department
PAYG	pay-as-you-go
SASS	State Authority for Social Security (former public sector scheme)
SSO	Social Security Organization (former private sector scheme)
TFR	total fertility rate
UNWPP	United Nations' World Population Prospects

Executive summary

The National Health Insurance (NHI) scheme of the Lao People's Democratic Republic is currently implemented in all provinces. Persons under the scope of the Social Security Law contribute to the National Social Security Fund (NSSF) for themselves and their dependents. The rest of the population is covered through government subsidies, except in Vientiane Capital. Inhabitants of Vientiane Capital can either join the NSSF on a voluntary basis or contribute to the Community Based Health Insurance (CBHI) scheme. All sources of revenues are pooled under the NHI Fund.

The NHI scheme provides for a comprehensive package of services, including ambulatory care and hospitalization, with a small copayment. Expectant mothers, children below the age of 5, poor patients and contributing members of the NSSF are exempt from the copayment.

The scheme is financed through a combination of government transfers and contributions from members of the NSSF (1.25% of insured earnings).

Coverage

Through the combinations of the three mechanisms mentioned above (NSSF, subsidized NHI and CBHI), the NHI scheme is presently covering 91 per cent[1] of the total population of the country (see table ES.1).

▶ Table ES.1. Health insurance coverage, 2022

	Vientiane Capital	17 provinces	Whole country
Total population	985 402	6 457 393	7 442 795
Health coverage in the formal sector			
State Authority for Social Security (SASS)	92 138	401 663	493 801
Social Security Organization (SSO)	169 476	133 663	303 139
Police scheme	25 000	57 837	82 837
Health coverage in the informal sector			
Subsidized NHI	n/a	5 837 245	5 837 245
CBHI	27 095	n/a	27 095
Total health coverage	**313 709**	**6 430 408**	**6 744 117**
Coverage rate	**31.8%**	**99.6%**	**90.6%**

n/a = not applicable.

1 The official population coverage rate of the National Health Insurance Bureau (NHIB) is 94.5 per cent. However, the data communicated to the actuarial team did not allow for the team to arrive at this coverage rate. This is due to several factors: non-inclusion of the defence force; the year of reference for the total Lao population; and discrepancies in the number of persons in the informal economy. The choice was made to report here on the population coverage rate calculated by the actuarial team based on the data collected from the NHIB, the Lao Social Security Organization and the Lao Statistical Bureau, while acknowledging that the officially reported coverage rate is 94.5 per cent.

Financial status of the NHI

Government subsidies are not sufficient to pay for the utilization of services by subsidized members, and payments to health facilities are often made after several months of delay. In 2020, the NHI scheme (including subsidized and NSSF members) experienced a global budget shortfall of 54.7 billion Lao kip. The provider payment rates have not been revised since 2017; while the general inflation rate averaged 3.6 per cent per year between 2018 and 2021, before shooting up to 23 per cent in 2022. The inflation rate is projected at 28.1 per cent in 2023.[2]

Funding requirements under present conditions

Under present conditions:

- **Informal sector (17 provinces).** The net funding requirements from the Government are estimated at 312 billion kip in 2023 (0.118 per cent of GDP), and are projected to stay stable as a percentage of GDP until 2030 under current conditions.
- **NSSF members.** According to the projections, the contribution rate of NSSF members should be increased to 1.5 per cent from 2024 (instead of the current 1.25 per cent) to support health expenditures until 2030 under present conditions and to maintain a sufficient contingency reserve for absorbing fluctuations in experience.
- **CBHI.** In 2024, CBHI premium rates will represent only 28 per cent of scheme's expenditures, and this ratio is projected to gradually decrease to 20 per cent in 2030. CBHI premium rates should be increased.

Adjustment for inflation. If provider payment rates were adjusted to account for the inflation rate of 2022 (23 per cent) and the estimated inflation rate of 2023 (28.1 per cent) and from 2024 in line with the medical inflation assumption of 5 per cent per annum:

- **Informal sector (17 provinces).** The net funding requirements from the Government, estimated at 312 billion kip in 2023 (0.118 per cent of GDP), would increase to 524 billion kip in 2024 (0.183 per cent of GDP) and would stay around 0.20 per cent of GDP until 2030 if provider payment rates are adjusted for the inflation of 2022 and 2023, and continue to be regularly adjusted in the future.
- **NSSF members.** The contribution rate of NSSF members would need to be increased to 1.7 per cent from 2024 to support health expenditures until 2030 and to maintain a sufficient contingency reserve for absorbing fluctuations in experience.
- **CBHI.** In 2024, CBHI premium rates would represent only 19 per cent of the scheme's expenditures, and this ratio is projected to gradually decrease to 13 per cent in 2030. CBHI premium rates should be increased.

Additional sensitivity tests. Section 3.3 presents additional sensitivity tests according to different assumptions on: (1) unit cost reference rates; (2) utilization rates; and (3) wage increases of NSSF members.

2 IMF, World Economic Outlook, October 2023.

Impact of the draft amendments (Instruction) under study at the Ministry of Health

The Ministry of Health has drafted an Instruction with a proposed increase of copayment rates, new provider payment rates (capitation and case-based fees), and a revision of Outpatient Department (OPD) coverage.

In terms of coverage, the main change is that OPD would be covered only in health centres for the general population. OPD in district hospitals, provincial hospitals and regional hospitals would be covered only for the poor, pregnant women and children below age 5.

Provided payment rates and capitation amounts would be increased by approximately 40 per cent when considered globally. Copayment rates would also be increased and would be separated for the Inpatient Department (IPD) between general inpatient services and surgeries.

According to these draft amendments:

- **Informal sector (17 provinces).** The net funding requirements from the Government, estimated at 312 billion kip in 2023 (0.118 per cent of GDP), would increase to 339 billion kip in 2024 (0.119 per cent of GDP) and would stay around 0.12 per cent of GDP until 2030 if provider payment rates continue to be regularly adjusted in the future.
- **NSSF members.** According to these projections providing for an important adjustment of provider payment rates in 2024, the contribution rate of NSSF members would need be increased to 1.5 per cent from 2024 to support health expenditures until 2030 and to maintain a sufficient contingency reserve for absorbing fluctuations in experience.
- **CBHI.** The CBHI premium level would need to be increased (multiplied by a factor of 5.0) in 2024 and adjusted periodically thereafter in line with the increase of health services costs.

The draft amendments represent a step in the right direction for supporting health providers and improving the delivery of health services, but the increases presently envisaged would not completely compensate for the very high inflation faced by the Lao People's Democratic Republic in 2022 and 2023.

▶ Table ES.2. Summary of costings

	Current structure and design	Current structure and design adjusted for inflation	Reforms (draft decree)
Informal sector (funding requirements)			
2023	312 billion kip (0.118% of GDP)	312 billion kip (0.118% of GDP)	312 billion kip (0.118% of GDP)
2024	340 billion kip (0.119% of GDP)	524 billion kip (0.183% of GDP)[1]	339 billion kip (0.119% of GDP)[2]
2030	563 billion kip (0.130% of GDP)	877 billion kip (0.202% of GDP)	524 billion kip (0.121% of GDP)
Required NSSF contribution rate[3] (% insured earnings)	1.5%	1.7%	1.5%

	Current structure and design	Current structure and design adjusted for inflation	Reforms (draft decree)
CBHI premium rates	Represent 30% of total expenditures in 2022. Gradually decreases to 20% in 2030 if premium rates not adjusted.	Represent 30% of total expenditures in 2022. Decreases to 19% in 2024 and 13% in 2030 if premium rates not adjusted.	Represent 30% of total expenditures in 2022. Decreases to 21% in 2024 and 15% in 2030 if premium rates not adjusted.

1 First year of application of revised provider payment rates.
2 First year of application of revised provider payment rates and new copayment rates.
3 Recommend immediate increase of NSSF contribution rate for health, and revision every three years.

Extension of coverage to Vientiane Capital

Two options are considered for an extension of coverage to Vientiane Capital:

- An extension of coverage to all persons in Vientiane Capital. This would represent the addition of approximately 680,421 covered persons and a net funding requirement for the State of 175 billion kip in 2024, when considering the increase of copayments proposed in the draft decree.
- An extension of coverage limited to selected vulnerable groups (the poor, children below age 5 and pregnant women). This would represent approximately 119,352 persons in 2024 and health expenditures estimated at 32 billion kip in 2024.

Recommendations

- Increase provider payment rates (capitation and case-based fees) to reflect the inflation rates of 2022 and 2023, and introduce a mechanism for automatically adjusting provider payment rates, copayment rates and CBHI premiums to reflect the increase of health services costs in the future.
- Increase the NSSF contribution rate for health insurance to 1.5 per cent of insured earnings in 2024, and review it every three years.
- Extend NHI coverage to Vientiane Capital, at least to vulnerable groups, including persons with disabilities.
- Undertake a central hospital costing exercise to obtain a recent and precise estimate of unit costs for all types of health services and to inform rate setting in the future.
- Additional sources of financing may also be explored, like taxes on tobacco and alcohol.

1. Introduction

The National Health Insurance Fund is the government fund to ensure universal access to basic and essential healthcare services for the entire population of the Lao People's Democratic Republic. The National Health Insurance (NHI) scheme is currently financed through a combination of government transfers and contributions from members of the National Social Security Fund (NSSF) for private sector workers and civil service employees (1.25 per cent out of the global NSSF contribution rate of 11.5 per cent).

The NHI scheme is managed by the National Health Insurance Bureau (NHIB), under the Ministry of Health (MOH).

In 2016, the NHIB officially launched a tax-based scheme for the informal sector. The NHI scheme was designed to be complementary to the existing schemes for the formal sector, which are grouped under the semi-autonomous National Social Security Fund (NSSF) of the Ministry of Labour and Social Welfare (MOLSW) and comprise the former State Authority for Social Security (SASS) and the former Social Security Organization (SSO).

The NHI is a cornerstone of the government's Plan for Health Sector Reform, including the achievement of universal health coverage by 2025, with targets of social health protection coverage of more than 95 per cent and of out-of-pocket spending accounting for less than 30 per cent of total health expenditure. The Law on Health Insurance promulgated in 2018 led to the full merger of existing social health protection schemes in July 2019, with "legal" coverage estimated at 91 per cent of the total population. According to the Law, members are entitled to a comprehensive package of services, including ambulatory care and hospitalization, with a small copayment. Expectant mothers, children below the age of 5, poor patients and contributing members of the NSSF are exempt from the copayment.

However, coverage is incomplete, and there are persistent inequalities in access to care, high out-of-pocket payments, limited public spending on healthcare, and shortages of drugs and skilled workers.

Article 41 of the Law on Health Insurance provides that the NHI's income sources shall be reviewed periodically based on socio-economic indicators and the cost of healthcare services to ensure the progression and sustainability of the scheme. This report represents the first actuarial assessment of the Lao NHI scheme.

The present report is structured as follows:

- Section 2 presents a summary of the present health insurance coverage in the Lao People's Democratic Republic and of the financial situation of the NHI.
- Section 3 presents a projection of the health expenditures for the period 2022–2030 and of the net funding requirements.
- Section 4 describes reform options along with their financial implications.

2. Coverage and financial situation of the health insurance system

This section presents data on the coverage and financial situation of the health insurance system of the Lao People's Democratic Republic.

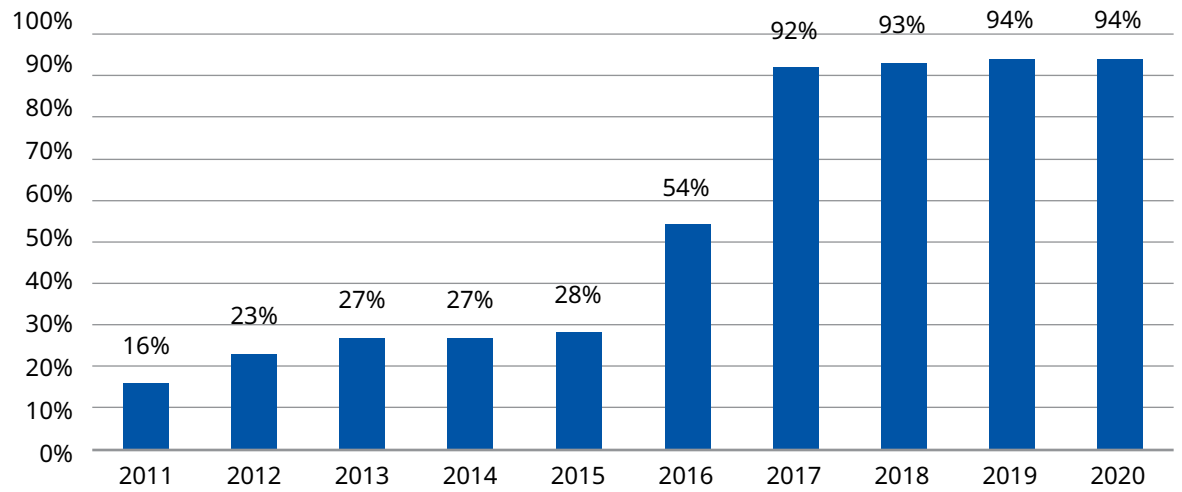
2.1. Regulatory and administrative context

The NHI is currently implemented in all provinces except Vientiane Capital. It is managed by the National Health Insurance Bureau (NHIB), a government agency established in 2014 under the MOH. Since 2019, the NHIB is also administering the health insurance branch of the NSSF as a first step towards integration of schemes into a single payer system. Appendix 1 presents a summary of the Law on Health Insurance.

2.2. Coverage

During the period 2008–2012, the Government worked at the drafting of the Decree on National Health Insurance, No. 470/Gov. A number of pilot programmes were conducted over the period 2013–2017 to gradually expand health coverage under the NHI. In 2018 and 2019, pilots were conducted to merge the NHI for the informal sector with the SASS (civil servant) and SSO (formal private sector employees). According to government estimates, 94 per cent of the population was legally covered under the NHI as of 2020 (Vientiane Capital is not yet included under the Government subsidies).

▶ Figure 2.1. Percentage of the population legally covered by the NHI, 2011–2020



Even though the legal coverage increased significantly between 2015 and 2020, important coverage gaps remain:

- Within the formal sector, compliance of enterprises with the Lao Social Security Organization (LSSO) is low in regard to registration and payment of contributions, limiting the effective coverage of employees and their dependents.
- In Vientiane Capital, workers in informal employment have two options to benefit from health insurance coverage: (i) voluntary registration with the CBHI scheme; or (ii) registration with the LSSO voluntary scheme (which covers health along with other social security contingencies). Effective coverage remains very low for the two schemes.
- In the other provinces (where the subsidy policy applies), the level of effective coverage is unknown, given the absence of a registration mechanism and the absence of national surveys measuring people's knowledge of NHI benefits and the procedures to access insured services.

Table 2.1 compares the level of health insurance coverage in 2020 with the level of coverage in 2022, based on the data used for this actuarial assessment. The national coverage rate remained around 91 per cent during that period.

▶ Table 2.1. Health insurance coverage, 2020 and 2022

2020[1]			
	Vientiane Capital	**17 provinces**	**Whole country**
Total population	948 447	6 282 763	7 231 210
Health coverage in formal sector			
State Authority for Social Security (SASS)	89 774	400 590	490 364
Social Security Organization (SSO)	133 395	114 736	248 131
Police scheme	23 967	49 960	73 927
Health coverage in informal sector			
NHI	n/a	5 717 477	5 717 477
CBHI	37 294	n/a	37 294
Total health coverage	**284 430**	**6 282 763**	**6 567 193**
Coverage rate	**30.0%**	**100.0%**	**90.8%**
2022[2]			
	Vientiane Capital	**17 provinces**	**Whole country**
Total population	985 402	6 457 393	7 442 795
Health coverage in formal sector			
State Authority for Social Security (SASS)	92 138	401 663	493 801
Social Security Organization (SSO)	169 476	133 663	303 139
Police scheme	25 000	57 837	82 837

	Vientiane Capital	17 provinces	Whole country
Health coverage in informal sector			
NHI	n/a	5 837 245	5 837 245
CBHI	27 095	n/a	27 095
Total health coverage	**313 709**	**6 430 408**	**6 744 117**
Coverage rate	**31.8%**	**99.6%**	**90.6%**

n/a = not applicable.
1 Source: Lao Statistics Bureau and NHIB data.
2 Source: Special extraction from DHIS-2.

2.3. Current financial status of the NHI

NHI coverage for workers in informal employment is non-contributory and funded mainly from the national budget. Users are charged a small copayment at the point of service, with exemptions for the poor, pregnant women and children under the age of 5. The NHI also provides cash benefits to cover transportation costs and food for deliveries/childbirth at health facilities. For the formal sector (NSSF members and their dependents), contributions at 1.25 per cent of covered earnings are transferred from the NSSF to the NHI Fund.

In 2020, the NHI scheme experienced a global budget shortfall of 54.7 billion kip (see table 2.2). The budget shortfall of the NHI for the informal sector in the 17 provinces (86 billion kip) was partially offset by a surplus coming from the difference between contributions transferred from the NSSF (at 1.25 per cent of covered earnings) and NSSF benefit claims, highlighting the cross-subsidy from the NSSF to the NHI in that year. Moreover, the NHI used a portion of the 2021 budget to pay 2020 claims (payables of 34.4 billion kip).

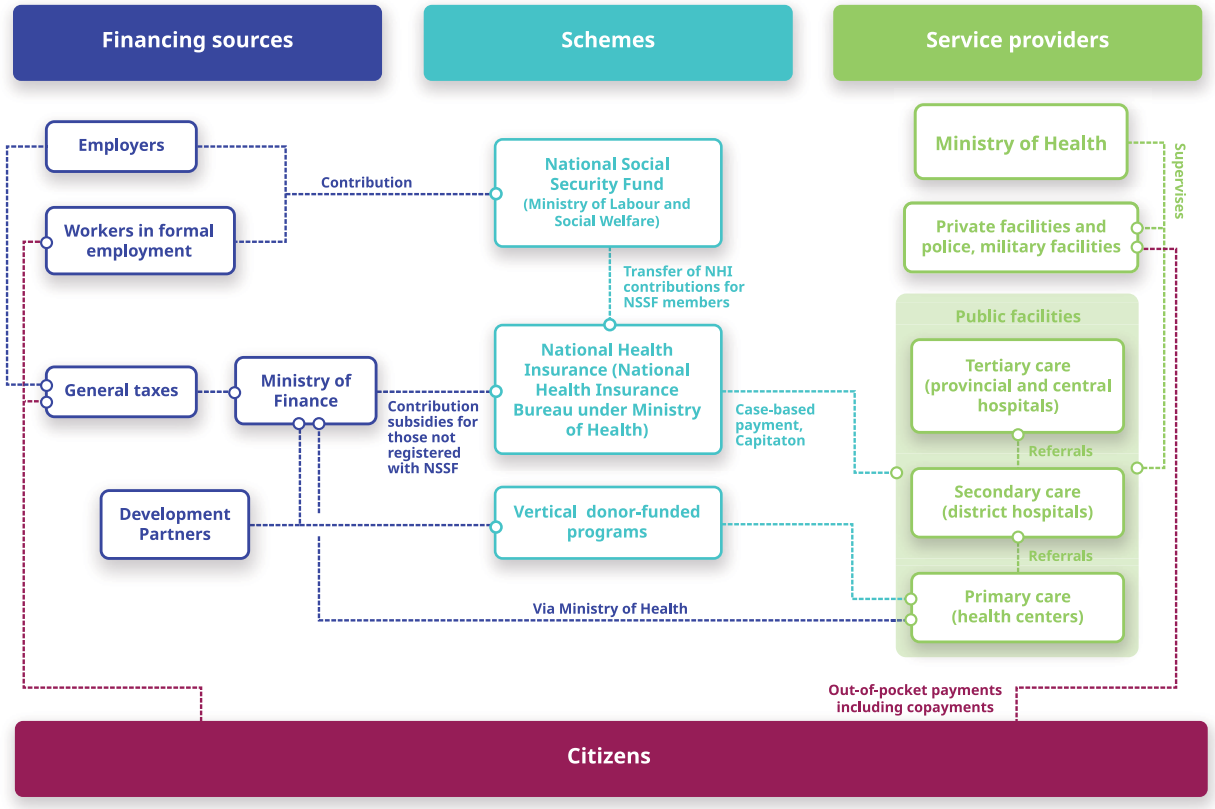
▶ Table 2.2. Financial status of the NHI (including NSSF), 2020

Revenues	(billion kip)
NHI budget from subsidy (Ministry of Finance)	180.0
Transfer from NSSF	90.0
Total	**270.0**
Expenditures	
Benefit claims (17 provinces, including claims of formal sector in provinces)	
NHI claims for subsidized members (net of copayments worth 21.6 billion kip)	266.6
NSSF benefit claims	23.7
Payables	34.4
Total	**324.7**
Budget balance	**-54.7**

Source: Lao People's Democratic Republic, MOH, "Options for the Financial Sustainability of the National Health Insurance Scheme", Policy Brief, October 2021.

Public health facilities receive an annual budget subsidy from MOH covering capital costs, salaries of hospital staff, recurrent operation costs, and activities (for example, health prevention, training and so on). In addition, direct costs incurred by health facilities are recovered through technical revenues, including copayment from users and reimbursements from health insurance schemes (at the stated provider payment rates). The provider payment rates have not been revised since 2017; while the general inflation rate averaged 3.6 per cent per year between 2018 and 2021, before spiking to 23 per cent in 2022. The inflation rate is projected at 28.1 per cent in 2023.[3]

▶ Figure 2.2. Overview of main financial flows of the social health protection system in the Lao People's Democratic Republic



Source: ILO, Extending Social Health Protection: Accelerating Progress towards Universal Health Coverage in Asia and the Pacific, 2021.

Government subsidies are not sufficient to pay for the utilization of services by subsidized members, and payments to healthcare providers are typically made after several months of delay. As of end of May 2023, the NHIB had not paid healthcare facilities since December 2022. This is reported to result in limited provision of services, and particularly of drugs. It is reported that some patients need to pay themselves for services that are meant to be covered by the health insurance scheme. This led to increased number of complaints, especially from LSSO members who are contributing to the system but feel they no longer not receive benefits to which they are entitled by law.[4]

3 IMF, World Economic Outlook, October 2023.
4 Feedback received through the consultative process of the Health Insurance Law revision.

3. Projection of health expenditures and funding requirements under present provisions

This section presents projections for health expenditures for the period 2022–2030 under the health insurance system's current design for: (1) the NHI of the informal sector in the 17 provinces; (2) NSSF members; and (3) CBHI members. It concludes with an assessment of the net funding requirements of each scheme once the sources of income for each scheme are considered.

The objective is to determine: (1) the required level of government subsidies, now and in the future, for financing the NHI of the informal sector in the 17 provinces; (2) the required contribution rate for the specific groups not financed by government subsidies (NSSF and CBHI); and (3) the level of reserves required for each scheme.

An important issue is that provider payment rates have not been updated since 2017. Expenditure projections are thus presented under two bases: first, based on current payment rates; and secondly, based on real costs (considering inflation of health costs since the last assessment).

3.1. Status quo scenario

3.1.1. Unit cost reference rates

As described in Appendix 1 (tables A1.2 and A1.3) below, payments to providers are done through capitation fees for the Outpatient Department (OPD) and case-based fixed fees for the Inpatient Department (IPD).

Unit cost reference rates by type of facility (central hospital, regional hospital, provincial hospital, district hospital, health centre) and according to OPD or IPD were estimated in 2021. For the status quo scenario, these unit costs are used as a proxy for provider payment rates in 2022 and 2023. An inflation of health services costs of 5 per cent per annum is assumed thereafter. This is 2 per cent above the long-term Consumer Price Index (CPI) increase assumption used for the NSSF actuarial valuation (it is considered that the inflation of healthcare costs is higher than the general inflation level in the economy as measured by the CPI).

▶ Table 3.1. Unit cost reference rates, 2021 (used for 2022 and 2023)

Type of facility	OPD	IPD
Central hospital	170 000	2 188 000
Regional hospital	165 000	1 178 000
Provincial hospital	99 000	890 000
District hospital	50 000	435 000
District hospital	56 000	355 000
Health centre	24 000	157 000

Source: ILO, Costing of Public Health Facilities in Lao PDR: Summary of Results, Budget Projections, and Proposed Revision of NHI Provider Payment Rates, March 2022.

3.1.2. Utilization rates

For NHI insured persons in the informal sector (17 provinces), utilization rates are taken from table B.1. in Annex B of the report *Costing of Public Health Facilities in Lao PDR: Summary of Results, Budget Projections, and Proposed Revision of NHI Provider Payment Rates* (March 2022). They were adjusted to reproduce the number of cases reported for 2022 under DHIS-2. Adjusted utilization rates appear in table A4.5 in Appendix 4 below. These utilization rates are projected to increase by 5 per cent per year for OPD and 2 per cent per year for IPD from 2023 onwards.[5]

For NSSF members and for CBHI members, utilization rates for 2022 are taken directly from DHIS 2 data. For these groups, OPD utilization rates are assumed to remain stable over time; while IPD utilization rates increase by 2 per cent per year from 2023 onwards.

3.1.3. Copayment income

For NHI members in the 17 provinces (informal sector), copayment rates are presently as indicated in table 3.2. They are not paid by the following groups receiving health services:

- poor households (as determined annually by district authorities);
- pregnant women;
- children below age 5 (inpatient care only);
- monks and novices;
- persons insured under the NSSF.

▶ Table 3.2. NHI copayment rates (kip per visit)

Type of service	Type of health facility			
	Health centre	District hospital	Provincial hospital	Regional hospital
Outpatient	5 000	10 000	15 000	20 000
Inpatient	5 000	30 000	30 000	30 000

5 However, for the estimation of the total value of copayment exemptions, it is assumed, as a simplification, that utilization rates for the three groups exempted from copayments (poor households, pregnant women and children below age 5) are static over time.

Copayment revenues are projected as follows:

- A first estimate is made of potential copayment amounts that would be payable **without considering** the exempted groups, using the total number of projected cases and the present copayment rates.
- The global amount of copayment exemptions for the three exempted groups (children under age 5, pregnant women and poor households) is then calculated as follows:
  - From the number of cases in each health facility, a "weighted" copayment rate applicable to each exempted group is calculated.
  - The number of cases for each exempted group is projected as follows:
    - Children under 5: in line with the evolution of the number of children under age 5 in the general population projection;
    - Pregnant women: in line with the evolution of the number of births in the general population projection;
    - Poor households: in line with the evolution of the total population.

3.1.4. Contribution revenue from NSSF members

Contributions from NSSF members are calculated as 1.25 per cent of insured earnings of NSSF contributors, plus 1.25 per cent of pensions received by NSSF pensioners, according to the NSSF actuarial report (total for Vientiane Capital and the 17 provinces).

A comparison between these projected contributions (at 1.25 per cent) from NSSF members and the health expenditures of that group allows one to assess if the current contribution rate is sufficient for financing the health expenditures of that group, or if an adjustment is required (while also considering the need to maintain a reserve for absorbing experience deviations in the future).

The number of NSSF members is projected to increase in line with the projections of the actuarial valuation of the NSSF.

3.1.5. Community-Based Health Insurance (CBHI)

CBHI is a voluntary scheme in Vientiane Capital. Data available included utilization rates (separately) for the central and district hospitals and for OPD and IPD. However, costs were grouped for OPD and IPD. Utilization rates are projected to be stable over time for OPD and to increase by 2 per cent per year for IPD from 2023 onwards.

Theoretical reference rates are then applied to the number of cases. An adjustment is introduced to match the total expenditures for 2022. Costs per case are assumed to increase by 5 per cent per year from 2023.

The number of CBHI members is projected to increase at the same pace as total employment in the country.

Detailed premium rates by family size and by product appear in Appendix 1. From there, it is assumed that the average premium per family is 38,526 kip per month in 2022.

3.1.6. Projection of health expenditures and net funding requirements

Tables 3.3 to 3.6 present the projection of health expenditures under the status quo scenario for the different groups of insured: NHI informal sector (17 provinces); NSSF members (17 provinces); NSSF members (Vientiane Capital); and CBHI.

Table 3.7 presents the net funding requirements from the Government under the status quo scenario, considering the sources of income specific to each group (copayments for the informal sector in the 17 provinces, contributions from NSSF members, and CBHI premiums). The figures in table 3.7 demonstrate the following:

- **Informal sector (17 provinces).** The net funding requirements from the Government are estimated at 312 billion kip in 2023 (0.118 per cent of GDP), and are projected to stay stable as a percentage of GDP until 2030 under current conditions.
- **NSSF members.** According to the projections, the contribution rate of NSSF members should be increased to 1.5 per cent from 2024 (instead of the current 1.25 per cent) to support health expenditures until 2030 under present conditions and to maintain a sufficient contingency reserve for absorbing fluctuations in experience.
- **CBHI.** In 2024, CBHI premium rates represent only 28 per cent of the scheme's expenditures, and this ratio is projected to gradually decrease to 20 per cent in 2030. CBHI premium rates should be increased (multiplied by a factor of 3.5) in 2024 and adjusted periodically thereafter in line with the increase of health services costs.

▶ **Table 3.3. Projected health insurance expenditures, NHI informal sector (17 provinces), 2022–2030 (billion kip)**

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
	5 864 230	5 919 030	5 971 002	6 019 834	6 066 375	6 110 313	6 151 560	6 189 913	6 225 309
Projected expenditures (billion kip)									
OPD									
Central hospitals (referrals)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional hospitals	9.9	10.5	11.6	12.9	14.4	16.0	17.7	19.6	21.8
Provincial hospitals	27.8	29.5	32.8	36.4	40.5	45.0	49.9	55.4	61.4
District hospitals Type A	17.3	18.3	20.4	22.6	25.2	27.9	31.0	34.4	38.1
District hospitals Type B	39.3	41.6	46.3	51.4	57.2	63.5	70.4	78.1	86.7
Health centres	38.1	40.4	44.9	49.9	55.4	61.6	68.3	75.8	84.1
Total	**132.3**	**140.2**	**156.0**	**173.4**	**192.6**	**213.9**	**237.4**	**263.4**	**292.0**
IPD									
Central hospitals (referrals)	0.5	0.5	0.5	0.6	0.6	0.6	0.7	0.7	0.8
Regional hospitals	51.7	53.2	57.5	62.0	67.0	72.2	77.9	83.9	90.4
Provincial hospitals	70.0	72.0	77.8	84.0	90.7	97.9	105.5	113.7	122.5
District hospitals Type A	23.7	24.4	26.4	28.5	30.8	33.2	35.8	38.6	41.6
District hospitals Type B	24.8	25.6	27.6	29.8	32.2	34.7	37.5	40.4	43.5
Health centres	8.9	9.1	9.9	10.6	11.5	12.4	13.4	14.4	15.5
Total	**179.6**	**184.9**	**199.7**	**215.7**	**232.8**	**251.1**	**270.7**	**291.8**	**314.3**
Transportation and food	10.4	10.8	11.9	13.0	14.2	15.5	16.9	18.5	20.2
Total expenditures	**322.3**	**335.9**	**367.6**	**402.0**	**439.5**	**480.5**	**525.1**	**573.6**	**626.5**

▶Table 3.4. Projected health insurance expenditures, NSSF members (17 provinces), 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
	593 163	621 529	651 004	681 579	713 324	746 238	780 344	815 654	852 209
Projected expenditures (billion kip)									
OPD									
Central hospitals (referrals)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional hospitals	3.2	3.4	3.7	4.1	4.5	5.0	5.4	6.0	6.5
Provincial hospitals	9.1	9.6	10.5	11.6	12.7	14.0	15.3	16.8	18.4
District hospitals Type A	5.7	5.9	6.5	7.2	7.9	8.7	9.5	10.4	11.5
District hospitals Type B	12.9	13.5	14.8	16.3	17.9	19.7	21.6	23.7	26.0
Health centres	12.5	13.1	14.4	15.8	17.4	19.1	21.0	23.0	25.3
Total	**43.4**	**45.5**	**50.0**	**55.0**	**60.4**	**66.4**	**72.9**	**80.0**	**87.8**
IPD									
Central hospitals (referrals)	0.1	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2
Regional hospitals	11.4	12.2	13.7	15.3	17.2	19.2	21.5	24.1	27.0
Provincial hospitals	15.4	16.5	18.5	20.8	23.3	26.1	29.2	32.7	36.6
District hospitals Type A	5.2	5.6	6.3	7.0	7.9	8.8	9.9	11.1	12.4
District hospitals Type B	5.5	5.9	6.6	7.4	8.3	9.3	10.4	11.6	13.0
Health centres	2.0	2.1	2.3	2.6	2.9	3.3	3.7	4.1	4.6
Total	**39.6**	**42.3**	**47.5**	**53.2**	**59.7**	**66.9**	**74.9**	**83.8**	**93.8**
Total expenditures	**83.0**	**87.8**	**97.5**	**108.2**	**120.1**	**133.3**	**147.8**	**163.8**	**181.6**

▶Table 3.5. Projected health insurance expenditures, NSSF members (Vientiane Capital), 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
LSSO-Vientiane members (Central hospitals)	272 196	285 213	298 739	312 769	327 337	342 441	358 092	374 295	391 070
LSSO-Vientiane members (District hospitals)	14 418	15 108	15 824	16 567	17 339	18 139	18 968	19 826	20 715
Projected expenditures (billion kip)									
OPD									
Central hospitals	35.1	36.8	40.5	44.5	48.9	53.7	59.0	64.7	71.0
District hospitals	1.7	1.8	2.0	2.2	2.4	2.6	2.9	3.2	3.5
Total	**36.8**	**38.6**	**42.5**	**46.7**	**51.3**	**56.3**	**61.9**	**67.9**	**74.5**
IPD									
Central hospitals	13.7	14.6	16.4	18.4	20.6	23.1	25.9	29.0	32.4
District hospitals	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1
Total	**13.7**	**14.7**	**16.5**	**18.4**	**20.7**	**23.2**	**25.9**	**29.0**	**32.5**
Total expenditures	**50.6**	**53.3**	**58.9**	**65.1**	**72.0**	**79.5**	**87.8**	**96.9**	**107.0**

▶Table 3.6. Projected CBHI expenditures, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
CBHI members (Central hospitals)	12 399	12 992	13 608	14 247	14 911	15 599	16 312	17 050	17 814
CBHI members (District hospitals)	14 696	15 399	16 129	16 887	17 673	18 489	19 334	20 208	21 114
Projected expenditures (billion kip)									
OPD									
Central hospitals	3.9	4.0	4.5	4.9	5.4	5.9	6.5	7.1	7.8
District hospitals	1.1	1.2	1.3	1.4	1.5	1.7	1.9	2.0	2.2
Total	**5.0**	**5.2**	**5.7**	**6.3**	**6.9**	**7.6**	**8.4**	**9.2**	**10.1**
IPD									
Central hospitals	3.8	4.1	4.6	5.1	5.7	6.4	7.2	8.0	9.0
District hospitals	0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
Total	**3.9**	**4.2**	**4.7**	**5.3**	**5.9**	**6.6**	**7.4**	**8.3**	**9.3**
Total expenditures	**8.9**	**9.4**	**10.4**	**11.6**	**12.8**	**14.2**	**15.8**	**17.5**	**19.4**

▶ Table 3.7. Projected net funding requirements for each insured group, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	335.9	367.6	402.0	439.5	480.5	525.1	573.6	626.5
Copayment income	21.6	23.7	27.9	32.6	37.7	43.3	49.5	56.2	63.6
Net funding requirements	**300.7**	**312.3**	**339.6**	**369.4**	**401.9**	**437.2**	**475.6**	**517.4**	**562.9**
% of GDP	0.138%	0.118%	0.119%	0.121%	0.122%	0.124%	0.126%	0.128%	0.130%
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	156.4	173.4	192.1	212.8	235.6	260.8	288.6
NSSF contributions (1.25%)	119.7	136.8	151.8	166.5	182.9	201.0	220.4	241.5	264.3
Deficit	**13.9**	**4.3**	**4.6**	**6.9**	**9.2**	**11.7**	**15.2**	**19.3**	**24.3**
Required PAYG rate (no reserve)	1.40%	1.29%	1.29%	1.30%	1.31%	1.32%	1.34%	1.35%	1.36%
CBHI									
Total health expenditures	8.9	9.4	10.4	11.6	12.8	14.2	15.8	17.5	19.4
CBHI premiums	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
Deficit	**6.2**	**6.6**	**7.5**	**8.5**	**9.6**	**10.9**	**12.3**	**13.8**	**15.5**
Premiums as % of expenditures	30%	30%	28%	27%	25%	24%	22%	21%	20%

PAYG = Pay-as-you-go.

3.2. Alternative scenario (adjustment of provider payment rates for inflation)

An alternative scenario is presented in this section, under which it is assumed that provider payment rates would be adjusted in 2024 to account for the general inflation rates of 2022 and 2023. Under this alternative scenario, given the full recognition of inflation rates in 2022 and 2023, the wage increase assumption is modified accordingly, such that the real wage increase is kept unchanged.

3.2.1. Update of the unit cost rates

Under the alternative scenario, the unit costs estimated in 2021 are increased by 57.6 per cent in 2024 to account for the general inflation rates of 23.0 per cent observed in 2022 and 28.1 per cent projected by the International Monetary Fund (IMF) for 2023 (see table 3.8). This scenario appears more realistic, since it accounts for the actual increase of health services costs since the last estimation of unit cost rates in 2021. The unit cost rates determined for 2024 are then assumed to increase by 5 per cent per annum from 2025 onwards.

▶ Table 3.8. Unit cost reference rates (alternative scenario)

Type of facility	Estimated for 2021[1]		Updated in 2024[2]	
	OPD	IPD	OPD	IPD
Central hospital	170 000	2 188 000	267 857	3 447 478
Regional hospital	165 000	1 178 000	259 979	1 856 092
Provincial hospital	99 000	890 000	155 987	1 402 311
District hospital	50 000	435 000	78 782	685 399
District hospital	56 000	355 000	88 235	559 349
Health centre	24 000	157 000	37 815	247 374

1 Source: Costing of Public Health Facilities in Lao PDR: Summary of Results, Budget Projections, and Proposed Revision of NHI Provider Payment Rates, March 2022.
2 Applying inflation rates of 23.0 per cent for 2022 and 28.1 per cent for 2023.

3.2.2. Projection of health expenditures and net funding requirements

Tables 3.9 to 3.12 present the projection of health expenditures under the alternative inflation-adjusted scenario for the different groups of insured: NHI informal sector (17 provinces); NSSF members (17 provinces); NSSF members (Vientiane Capital); and CBHI.

Table 3.13 presents the net funding requirements from the Government under the inflation-adjusted scenario, considering the sources of income specific to each group (copayments for the informal sector in the 17 provinces, contributions from NSSF members, and CBHI premiums). The figures in table 3.13 demonstrate the following:

- **Informal sector (17 provinces).** The net funding requirements from the Government, estimated at 312 billion kip in 2023 (0.118 per cent of GDP), would increase to 524 billion kip in 2024 (0.183 per cent of GDP) and would stay around 0.20 per cent of GDP until 2030 if provider payment rates are adjusted for the inflation of 2022 and 2023 and continue to be regularly adjusted in the future.
- **NSSF members.** The contribution rate of NSSF members would need to be increased to 1.7 per cent from 2024 to support health expenditures until 2030 and to maintain a sufficient contingency reserve for absorbing fluctuations in experience.
- **CBHI.** In 2024, CBHI premium rates would represent only 19 per cent of the scheme's expenditures, and this ratio is projected to gradually decrease to 13 per cent in 2030. CBHI premium rates should be increased (multiplied by a factor of 5.0) in 2024 and adjusted periodically thereafter in line with the increase of health services costs.

▶ **Table 3.9. Projected health insurance expenditures, NHI informal sector (17 provinces), 2022–2030 – Unit costs adjusted for inflation in 2024 (billion kip)**

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
	5 864 230	5 919 030	5 971 002	6 019 834	6 066 375	6 110 313	6 151 560	6 189 913	6 225 309
Projected expenditures (billion kip)									
OPD									
Central hospitals (referrals)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional hospitals	9.9	10.5	17.5	19.4	21.6	23.9	26.6	29.5	32.7
Provincial hospitals	27.8	29.5	49.2	54.7	60.8	67.5	74.9	83.1	92.1
District hospitals Type A	17.3	18.3	30.6	34.0	37.8	41.9	46.5	51.6	57.2
District hospitals Type B	39.3	41.6	69.4	77.2	85.8	95.2	105.7	117.3	130.0
Health centres	38.1	40.4	67.4	74.9	83.2	92.4	102.5	113.8	126.1
Total	**132.3**	**140.2**	**234.0**	**260.1**	**289.0**	**321.0**	**356.3**	**395.2**	**438.2**
IPD									
Central hospitals (referrals)	0.5	0.5	0.8	0.8	0.9	1.0	1.0	1.1	1.2
Regional hospitals	51.7	53.2	86.2	93.1	100.5	108.4	116.9	126.0	135.7
Provincial hospitals	70.0	72.0	116.8	126.1	136.1	146.8	158.3	170.6	183.8
District hospitals Type A	23.7	24.4	39.6	42.8	46.2	49.8	53.7	57.9	62.4
District hospitals Type B	24.8	25.6	41.5	44.8	48.3	52.1	56.2	60.6	65.3
Health centres	8.9	9.1	14.8	16.0	17.2	18.6	20.1	21.6	23.3
Total	**179.6**	**184.9**	**299.7**	**323.6**	**349.3**	**376.8**	**406.3**	**437.8**	**471.6**
Transportation and food	10.4	10.8	17.8	19.5	21.3	23.3	25.4	27.8	30.3
Total expenditures	**322.3**	**335.9**	**551.6**	**603.2**	**659.6**	**721.0**	**787.9**	**860.8**	**940.1**

▶ **Table 3.10. Projected health insurance expenditures, NSSF members (17 provinces), 2022–2030 – Unit costs adjusted for inflation in 2024 (billion kip)**

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
	593 163	621 529	651 004	681 579	713 324	746 238	780 344	815 654	852 209
Projected expenditures (billion kip)									
OPD									
Central hospitals (referrals)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional hospitals	3.2	3.4	5.6	6.2	6.8	7.4	8.2	9.0	9.8
Provincial hospitals	9.1	9.6	15.8	17.3	19.1	20.9	23.0	25.2	27.7
District hospitals Type A	5.7	5.9	9.8	10.8	11.8	13.0	14.3	15.7	17.2
District hospitals Type B	12.9	13.5	22.3	24.5	26.9	29.6	32.5	35.6	39.1
Health centres	12.5	13.1	21.6	23.8	26.1	28.7	31.5	34.6	37.9
Total	**43.4**	**45.5**	**75.1**	**82.5**	**90.7**	**99.6**	**109.4**	**120.0**	**131.7**
IPD									
Central hospitals (referrals)	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Regional hospitals	11.4	12.2	20.5	23.0	25.8	28.9	32.3	36.2	40.5
Provincial hospitals	15.4	16.5	27.8	31.1	34.9	39.1	43.8	49.0	54.9
District hospitals Type A	5.2	5.6	9.4	10.6	11.8	13.3	14.9	16.6	18.6
District hospitals Type B	5.5	5.9	9.9	11.1	12.4	13.9	15.6	17.4	19.5
Health centres	2.0	2.1	3.5	3.9	4.4	5.0	5.5	6.2	7.0
Total	**39.6**	**42.3**	**71.3**	**79.9**	**89.6**	**100.4**	**112.4**	**125.8**	**140.8**
Total expenditures	**322.3**	**335.9**	**551.6**	**603.2**	**659.6**	**721.0**	**787.9**	**860.8**	**940.1**

▶Table 3.11. Projected health insurance expenditures, NSSF members (Vientiane Capital), 2022–2030 – Unit costs adjusted for inflation in 2024 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
LSSO-Vientiane members (Central hospitals)	272 196	285 213	298 739	312 769	327 337	342 441	358 092	374 295	391 070
LSSO-Vientiane members (District hospitals)	14 418	15 108	15 824	16 567	17 339	18 139	18 968	19 826	20 715
Projected expenditures (billion kip)									
OPD									
Central hospitals	35.1	36.8	60.7	66.8	73.4	80.6	88.5	97.1	106.6
District hospitals	1.7	1.8	3.0	3.3	3.6	3.9	4.3	4.8	5.2
Total	**36.8**	**38.6**	**63.7**	**70.0**	**77.0**	**84.6**	**92.8**	**101.9**	**111.8**
IPD									
Central hospitals	13.7	14.6	24.6	27.6	30.9	34.7	38.8	43.5	48.6
District hospitals	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	**13.7**	**14.7**	**24.7**	**27.7**	**31.0**	**34.8**	**38.9**	**43.6**	**48.8**
Total expenditures	**50.6**	**53.3**	**88.4**	**97.7**	**108.0**	**119.3**	**131.8**	**145.5**	**160.6**

▶Table 3.12. Projected CBHI expenditures, 2022–2030 – Unit costs adjusted for inflation in 2024 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
CBHI members (Central hospitals)	12 399	12 992	13 608	14 247	14 911	15 599	16 312	17 050	17 814
CBHI members (District hospitals)	14 696	15 399	16 129	16 887	17 673	18 489	19 334	20 208	21 114
Projected expenditures (billion kip)									
OPD									
Central hospitals	3.9	4.0	6.7	7.3	8.1	8.9	9.7	10.7	11.7
District hospitals	1.1	1.2	1.9	2.1	2.3	2.6	2.8	3.1	3.4
Total	**5.0**	**5.2**	**8.6**	**9.5**	**10.4**	**11.4**	**12.5**	**13.8**	**15.1**
IPD									
Central hospitals	3.8	4.1	6.8	7.7	8.6	9.6	10.8	12.1	13.5
District hospitals	0.1	0.1	0.2	0.2	0.3	0.3	0.3	0.4	0.4
Total	**3.9**	**4.2**	**7.1**	**7.9**	**8.9**	**9.9**	**11.1**	**12.5**	**13.9**
Total expenditures	**8.9**	**9.4**	**15.7**	**17.4**	**19.3**	**21.4**	**23.7**	**26.2**	**29.0**

▶Table 3.13. Projected net funding requirements for each insured group, 2022–2030 – Unit costs adjusted for inflation in 2024 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	335.9	551.6	603.2	659.6	721.0	787.9	860.8	940.1
Copayment income	21.6	23.7	27.9	32.6	37.7	43.3	49.5	56.2	63.6
Net funding requirements	**300.7**	**312.3**	**523.6**	**570.6**	**621.9**	**677.7**	**738.5**	**804.6**	**876.5**
% of GDP	0.138%	0.118%	0.183%	0.186%	0.189%	0.192%	0.195%	0.198%	0.202%
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	234.7	260.2	288.3	319.3	353.5	391.3	433.0
NSSF contributions (1.25%)	126.7	164.4	190.3	208.7	228.8	251.2	275.0	300.8	328.8
Deficit	**6.8**	**(23.3)**	**44.4**	**51.5**	**59.4**	**68.1**	**78.5**	**90.5**	**104.3**
Required PAYG rate (no reserve)	1.32%	1.07%	1.54%	1.56%	1.57%	1.59%	1.61%	1.63%	1.65%
CBHI									
Total health expenditures	8.9	9.4	15.7	17.4	19.3	21.4	23.7	26.2	29.0
CBHI premiums	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
Deficit	**6.2**	**6.6**	**12.7**	**14.3**	**16.0**	**18.0**	**20.1**	**22.5**	**25.2**
Premiums as % of expenditures	30%	30%	19%	18%	17%	16%	15%	14%	13%

3.3. Additional sensitivity tests

This section presents additional sensitivity tests performed on the following variables.

- **Unit cost reference rates.** Under the base scenario, health cost inflation is 5 per cent per year. Two sensitivity tests are presented:
  - Increase of 3 per cent per year;
  - Increase of 7 per cent per year.
- **NHI utilization rates of the informal sector.** Under the base scenario, OPD utilization increases by 5 per cent per year in the informal sector, and IPD utilization increases by 2 per cent per year. The following sensitivity tests are presented:
  - OPD
    - Increase of 3 per cent per year;
    - Increase of 7 per cent per year.
  - IPD
    - Increase of 4 per cent per year.
- **Wage increases of NSSF members.** The following sensitivity tests are presented:
  - Annual wage increases 1 per cent higher than the base scenario;
  - Annual wage increases 1 per cent lower than the base scenario.

The results of the sensitivity tests are presented in tables 3.14 to 3.20 below. They must be compared with the status quo scenario estimates appearing in section 3.1.6 above.

▶Table 3.14. Sensitivity test (unit cost reference rates increasing by 3% per year, instead of 5%) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	335.9	360.6	386.8	414.9	444.9	476.9	511.1	547.6
Copayment income	21.6	23.7	27.9	32.6	37.7	43.3	49.5	56.2	63.6
Net funding requirements	**300.7**	**312.3**	**332.6**	**354.2**	**377.2**	**401.6**	**427.5**	**454.9**	**484.0**
% of GDP	0.138%	0.118%	0.117%	0.116%	0.115%	0.114%	0.113%	0.112%	0.111%
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	153.5	166.8	181.3	197.0	214.0	232.4	252.2
NSSF contributions (1.25%)	119.7	136.8	151.8	166.5	182.9	201.0	220.4	241.5	264.3
Deficit	**13.9**	**4.3**	**1.6**	**0.3**	**(1.5)**	**(4.0)**	**(6.4)**	**(9.1)**	**(12.1)**
Required PAYG rate (no reserve)	1.40%	1.29%	1.26%	1.25%	1.24%	1.23%	1.21%	1.20%	1.19%
CBHI									
Total health expenditures	8.9	9.4	10.2	11.1	12.1	13.2	14.3	15.6	16.9
CBHI premiums	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
Deficit	**6.2**	**6.6**	**7.3**	**8.1**	**8.9**	**9.8**	**10.8**	**11.9**	**13.1**
Premiums as % of expenditures	30%	30%	29%	28%	27%	26%	25%	24%	23%

▶Table 3.15. Sensitivity test (unit cost reference rates increasing by 7% per year, instead of 5%) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	335.9	374.6	417.5	465.1	518.1	577.0	642.4	715.0
Copayment income	21.6	23.7	27.9	32.6	37.7	43.3	49.5	56.2	63.6
Net funding requirements	**300.7**	**312.3**	**346.6**	**384.9**	**427.4**	**474.8**	**527.6**	**586.2**	**651.4**
% of GDP	0.138%	0.118%	0.121%	0.126%	0.130%	0.134%	0.139%	0.145%	0.150%
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	159.4	180.0	203.3	229.5	258.9	292.0	329.3
NSSF contributions (1.25%)	119.7	136.8	151.8	166.5	182.9	201.0	220.4	241.5	264.3
Deficit	**13.9**	**4.3**	**7.6**	**13.5**	**20.4**	**28.4**	**38.5**	**50.6**	**65.0**
Required PAYG rate (no reserve)	1.40%	1.29%	1.31%	1.35%	1.39%	1.43%	1.47%	1.51%	1.56%
CBHI									
Total health expenditures	8.9	9.4	10.6	12.0	13.6	15.3	17.3	19.6	22.1
CBHI premiums	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
Deficit	**6.2**	**6.6**	**7.7**	**8.9**	**10.4**	**12.0**	**13.8**	**15.9**	**18.2**
Premiums as % of expenditures	30%	30%	28%	26%	24%	22%	20%	19%	17%

▶Table 3.16. Sensitivity test (informal sector OPD utilization rates increasing by 3% per year, instead of 5%) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	333.2	361.5	391.9	424.8	460.2	498.3	539.4	583.5
Copayment income	21.6	23.1	26.7	30.5	34.6	39.1	43.9	49.0	54.6
Net funding requirements	**300.7**	**310.1**	**334.8**	**361.5**	**390.2**	**421.2**	**454.5**	**490.3**	**528.9**
% of GDP	0.138%	0.117%	0.117%	0.118%	0.119%	0.119%	0.120%	0.121%	0.122%

▶Table 3.17. Sensitivity test (informal sector OPD utilization rates increasing by 7% per year, instead of 5%) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	338.7	373.8	412.4	455.2	502.3	554.5	612.1	675.7
Copayment income	21.6	24.2	29.2	34.8	41.0	47.9	55.6	64.2	73.9
Net funding requirements	**300.7**	**314.5**	**344.5**	**377.6**	**414.2**	**454.5**	**498.9**	**547.8**	**601.8**
% of GDP	0.138%	0.117%	0.117%	0.118%	0.119%	0.119%	0.120%	0.121%	0.122%

▶Table 3.18. Sensitivity test (informal sector IPD utilization rates increasing by 4% per year, instead of 2%) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	339.7	375.7	415.4	459.0	506.9	559.6	617.5	681.1
Copayment income	21.6	23.9	28.3	33.3	38.7	44.6	51.2	58.4	66.3
Net funding requirements	**300.7**	**315.8**	**347.4**	**382.1**	**420.3**	**462.3**	**508.5**	**559.1**	**614.8**
% of GDP	0.138%	0.119%	0.122%	0.125%	0.128%	0.131%	0.134%	0.138%	0.14%

▶Table 3.19. Sensitivity test (wage increase of NSSF members +1% per year) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	156.4	173.4	192.1	212.8	235.6	260.8	288.6
NSSF contributions (1.25%)	121.4	139.7	156.4	173.0	191.7	212.6	235.2	260.0	287.1
Deficit	**12.1**	**1.3**	**0.1**	**0.3**	**0.4**	**0.1**	**0.4**	**0.8**	**1.5**
Required PAYG rate (no reserve)	1.38%	1.26%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.26%

▶Table 3.20. Sensitivity test (wage increase of NSSF members -1% per year) – Projected net funding requirements, 2022–2030 (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	156.4	173.4	192.1	212.8	235.6	260.8	288.6
NSSF contributions (1.25%)	118.9	134.8	148.5	161.5	175.8	191.7	208.5	226.5	245.9
Deficit	**14.7**	**6.3**	**8.0**	**11.9**	**16.2**	**21.1**	**27.1**	**34.3**	**42.7**
Required PAYG rate (no reserve)	1.40%	1.31%	1.32%	1.34%	1.37%	1.39%	1.41%	1.44%	1.47%

4. Analysis of reform scenarios

The results presented in Section 3 show that there is a need to review provider payment rates (capitation and case-based fees), copayment rates, and the contribution rate of NSSF members for health insurance. In addition, given the difficult financial situation of the NHI, a revision of the benefit package may be envisaged.

The MOH has drafted an Instruction with a proposed increase of copayment rates, new provider payment rates (capitation and case-based fees), and a revision of OPD coverage. We present the financial implications of these proposed amendments in section 4.1. A second set of reform measures are presented in section 4.2 for extending coverage to the whole population of the country.

4.1. Description and financial implications of the draft amendments

The proposed measures represent a step in the right direction for supporting health providers and improving the delivery of health services, but the increases presently envisaged would not fully compensate for the very high inflation faced by the Lao People's Democratic Republic in 2022 and 2023. The changes proposed in the draft amendments are described in the following subsections.

4.1.1. Services covered

The draft amendments suggest new coverage rules. The main change is that OPD would be covered only in health centres for the general population. OPD in district hospitals, provincial hospitals and regional hospitals would be covered only for the poor, pregnant women and children below age 5.

▶ Table 4.1. Health services covered, according to draft amendments, by sector

Services	Health centre	District hospital	Provincial hospital	Regional hospital
Informal sector				
OPD	Covered	Not covered*	Not covered*	Not covered*
IPD, ANC, delivery, PNC and surgery	Covered	Covered	Covered	Covered
* Except for the poor, pregnant women and children below age 5, who are covered in all health facilities.				
Formal sector				
OPD	Covered	Covered	Covered	Covered
IPD, delivery and surgery	Covered	Covered	Covered	Covered

ANC = antenatal care; PNC = postnatal care.

4.1.2. Increase of provider payment rates

The draft amendments propose new provider payment rates (see table 4.2). When weighted by the utilization of each type of service, they represent a general increase of 40 per cent for service fees.

▶Table 4.2. New payment rates to healthcare providers, according to draft amendments (kip)

Type of service	Health centre	District hospital B	District hospital A	Provincial hospital	Regional hospital/ Central hospital
OPD referral/emergency case (social security member)	Capitation	100 000	100 000	150 000	200 000
IPD	Capitation	300 000	300 000	700 000	900 000
Delivery	Capitation	300 000	300 000	400 000	500 000
Caesarean	n/a	n/a	1 500 000	1 800 000	2 000 000
Minor surgery	Capitation	75 000	100 000	150 000	200 000
Medium surgery	n/a	n/a	1 500 000	1 800 000	2 000 000
Operation	n/a	n/a	2 000 000	2 500 000	3 000 000
Haemodialysis	n/a	n/a	n/a	800 000	1 000 000
CT scan / MRI / mammography / endoscopy	n/a	n/a	n/a	1 000 000	1 000 000
Cataract	n/a	n/a	1 500 000	1 800 000	2 000 000

n/a = Service not available through this type of provider.

Capitation fees vary according to the type of health facility and the utilization rate, as shown in table 4.3. These new rates globally represent an increase of 40 per cent compared to current rates.

▶Table 4.3. New capitation fees, according to draft amendments (kip)

Utilization rate	< 0.19	0.20–0.39	0.40–0.59	0.60–0.79	> 0.80	Per case
Provincial hospital	13 000	20 000	33 000	46 000	59 000	80 000
District hospital Type A	7 000	14 000	20 000	26 000	32 000	50 000
District hospital Type B	5 000	11 000	18 000	23 000	29 000	45 000
Health centre (OPD & IPD)	6 000	10 000	15 000	20 000	25 000	35 000

4.1.3. Increase of copayment rates

The draft Instruction suggests an increase of copayment rates, as shown in table 4.4. Copayments are not applicable to the poor, pregnant women, children under age 5, and members of the NSSF. These increased copayment rates must be considered in conjunction with the proposed provider payment rates, as well as the objective of the Government to keep out-of-pocket spending at less than 30 per cent of total health expenditures.

▶ Table 4.4. New copayment rates, according to draft amendments (kip per visit)

Type of service	Type of health facility				
	Health centre	District hospital Type B	District hospital Type A	Provincial hospital	Regional hospital
Outpatient	10 000	n/a	n/a	n/a	n/a
Inpatient (general)	30 000	60 000	100 000	200 000	300 000
Inpatient (surgery)	n/a	n/a	300 000	500 000	700 000

n/a = Service not available through this type of provider.

4.1.4. Financial implications of the draft amendments

Tables 4.5 to 4.8 present the projection of health expenditures under the status quo scenario for the different groups of insured: NHI informal sector (17 provinces); NSSF members (17 provinces); NSSF members (Vientiane Capital); and CBHI.

Table 4.9 presents the net funding requirements from the Government, considering the sources of income specific to each group (copayments for the informal sector in the 17 provinces, contributions from NSSF members, and CBHI premiums). The figures in table 4.9 demonstrate the following:

- **Informal sector (17 provinces).** The net funding requirements from the Government, estimated at 312 billion kip in 2023 (0.118 per cent of GDP), would increase to 339 billion kip in 2024 (0.119 per cent of GDP) and would stay around 0.12 per cent of GDP until 2030 if provider payment rates continue to be regularly adjusted in the future.
- **NSSF members.** According to projections providing for an important adjustment of provider payment rates in 2024, the contribution rate of NSSF members would need be increased to 1.5 per cent from 2024 to support health expenditures until 2030 and to maintain a sufficient contingency reserve for absorbing fluctuations in experience.
- **CBHI.** The CBHI premium level would need to be increased (multiplied by a factor of 5.0) in 2024 and adjusted periodically thereafter in line with the increase of health services costs.

▶Table 4.5. Projected health insurance expenditures, NHI informal sector (17 provinces), 2022–2030 – Draft amendments (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
	5 864 230	5 919 030	5 971 002	6 019 834	6 066 375	6 110 313	6 151 560	6 189 913	6 225 309
Projected expenditures (billion kip)									
OPD									
Central hospitals (referrals)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional hospitals	9.9	10.5	6.2	6.6	7.0	7.4	7.9	8.4	8.9
Provincial hospitals	27.8	29.5	8.1	8.6	9.1	9.7	10.3	11.0	11.7
District hospitals Type A	17.3	18.3	0.4	0.5	0.5	0.5	0.6	0.6	0.7
District hospitals Type B	39.3	41.6	0.3	0.3	0.3	0.3	0.4	0.4	0.4
Health centres	38.1	40.4	112.1	124.6	138.4	153.7	170.6	189.3	209.9
Total	**132.3**	**140.2**	**127.0**	**140.5**	**155.4**	**171.7**	**189.8**	**209.7**	**231.5**
IPD									
Central hospitals (referrals)	0.5	0.5	0.7	0.7	0.8	0.9	0.9	1.0	1.1
Regional hospitals	51.7	53.2	76.6	82.7	89.3	96.3	103.9	111.9	120.6
Provincial hospitals	70.0	72.0	103.8	112.1	120.9	130.5	140.7	151.6	163.3
District hospitals Type A	23.7	24.4	35.2	38.0	41.0	44.3	47.7	51.4	55.4
District hospitals Type B	24.8	25.6	36.9	39.8	42.9	46.3	50.0	53.8	58.0
Health centres	8.9	9.1	13.1	14.2	15.3	16.5	17.8	19.2	20.7
Total	**179.6**	**184.9**	**266.3**	**287.5**	**310.3**	**334.8**	**361.0**	**389.0**	**419.0**
Transportation and food	10.4	10.8	13.1	14.3	15.5	16.9	18.4	20.0	21.7
Total expenditures	**322.3**	**335.9**	**406.5**	**442.3**	**481.2**	**523.4**	**569.1**	**618.6**	**672.2**

▶Table 4.6. Projected health insurance expenditures, NSSF members (17 provinces), 2022–2030 – Draft amendments (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
	593 163	621 529	651 004	681 579	713 324	746 238	780 344	815 654	852 209
Projected expenditures (billion kip)									
OPD									
Central hospitals (referrals)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Regional hospitals	3.2	3.4	5.0	5.5	6.0	6.6	7.2	8.0	8.7
Provincial hospitals	9.1	9.6	14.0	15.4	16.9	18.6	20.4	22.4	24.6
District hospitals Type A	5.7	5.9	8.7	9.6	10.5	11.6	12.7	13.9	15.3
District hospitals Type B	12.9	13.5	19.8	21.8	23.9	26.3	28.8	31.6	34.7
Health centres	12.5	13.1	19.2	21.1	23.2	25.5	28.0	30.7	33.7
Total	**43.4**	**45.5**	**66.7**	**73.3**	**80.6**	**88.5**	**97.2**	**106.7**	**117.0**
IPD									
Central hospitals (referrals)	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3	0.3
Regional hospitals	11.4	12.2	18.2	20.4	22.9	25.7	28.7	32.2	36.0
Provincial hospitals	15.4	16.5	24.7	27.7	31.0	34.8	38.9	43.6	48.8
District hospitals Type A	5.2	5.6	8.4	9.4	10.5	11.8	13.2	14.8	16.5
District hospitals Type B	5.5	5.9	8.8	9.8	11.0	12.3	13.8	15.5	17.3
Health centres	2.0	2.1	3.1	3.5	3.9	4.4	4.9	5.5	6.2
Total	**39.6**	**42.3**	**63.3**	**71.0**	**79.6**	**89.2**	**99.9**	**111.8**	**125.1**
Total expenditures	**83.0**	**87.8**	**130.0**	**144.3**	**160.2**	**177.7**	**197.0**	**218.5**	**242.1**

▶Table 4.7. Projected health insurance expenditures, NSSF members (Vientiane Capital), 2022–2030 – Draft amendments (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
LSSO-Vientiane members (Central hospitals)	272 196	285 213	298 739	312 769	327 337	342 441	358 092	374 295	391 070
LSSO-Vientiane members (District hospitals)	14 418	15 108	15 824	16 567	17 339	18 139	18 968	19 826	20 715
Projected expenditures (billion kip)									
OPD									
Central hospitals	35.1	36.8	54.0	59.3	65.2	71.6	78.6	86.3	94.7
District hospitals	1.7	1.8	2.6	2.9	3.2	3.5	3.8	4.2	4.6
Total	**36.8**	**38.6**	**56.6**	**62.2**	**68.4**	**75.1**	**82.5**	**90.5**	**99.3**
IPD									
Central hospitals	13.7	14.6	21.9	24.5	27.5	30.8	34.5	38.6	43.2
District hospitals	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Total	**13.7**	**14.7**	**21.9**	**24.6**	**27.6**	**30.9**	**34.6**	**38.7**	**43.3**
Total expenditures	**50.6**	**53.3**	**78.6**	**86.8**	**96.0**	**106.0**	**117.1**	**129.3**	**142.7**

▶Table 4.8. Projected CBHI expenditures, 2022–2030 – Draft amendments (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Covered population									
CBHI members (Central hospitals)	12 399	12 992	13 608	14 247	14 911	15 599	16 312	17 050	17 814
CBHI members (District hospitals)	14 696	15 399	16 129	16 887	17 673	18 489	19 334	20 208	21 114
Projected expenditures (billion kip)									
OPD									
Central hospitals	3.9	4.0	5.9	6.5	7.2	7.9	8.7	9.5	10.4
District hospitals	1.1	1.2	1.7	1.9	2.1	2.3	2.5	2.7	3.0
Total	**5.0**	**5.2**	**7.6**	**8.4**	**9.2**	**10.1**	**11.1**	**12.2**	**13.4**
IPD									
Central hospitals	3.8	4.1	6.1	6.8	7.6	8.6	9.6	10.7	12.0
District hospitals	0.1	0.1	0.2	0.2	0.2	0.3	0.3	0.3	0.4
Total	**3.9**	**4.2**	**6.3**	**7.0**	**7.9**	**8.8**	**9.9**	**11.1**	**12.4**
Total expenditures	**8.9**	**9.4**	**13.9**	**15.4**	**17.1**	**19.0**	**21.0**	**23.3**	**25.8**

▶Table 4.9. Projected net funding requirements for each insured group, 2022–2030 – Draft amendments (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
NHI informal sector (17 provinces)									
Total health expenditures	322.3	335.9	406.5	442.3	481.2	523.4	569.1	618.6	672.2
Copayment income	21.6	23.7	67.3	78.3	90.0	102.8	116.6	131.6	147.8
Net funding requirements	**300.7**	**312.3**	**339.1**	**364.1**	**391.2**	**420.6**	**452.5**	**487.0**	**524.4**
% of GDP	0.138%	0.118%	0.119%	0.119%	0.119%	0.119%	0.120%	0.120%	0.121%
NSSF members (17 province and Vientiane Capital)									
Total health expenditures	133.6	141.1	208.6	231.2	256.1	283.7	314.1	347.7	384.8
NSSF contributions (1.25%)	126.7	164.4	190.3	208.7	228.8	251.2	275.0	300.8	328.8
Deficit	**6.8**	**(23.3)**	**18.2**	**22.5**	**27.3**	**32.5**	**39.1**	**46.9**	**56.0**
Required PAYG rate (no reserve)	1.32%	1.07%	1.37%	1.38%	1.40%	1.41%	1.43%	1.44%	1.46%
CBHI									
Total health expenditures	8.9	9.4	13.9	15.4	17.1	19.0	21.0	23.3	25.8
CBHI premiums	2.7	2.8	2.9	3.1	3.2	3.4	3.5	3.7	3.8
Deficit	**6.2**	**6.6**	**11.0**	**12.4**	**13.9**	**15.6**	**17.5**	**19.6**	**22.0**
Premiums as % of expenditures	30%	30%	21%	20%	19%	18%	17%	16%	15%

4.2. Extension of coverage to Vientiane Capital

The NHI currently does not provide coverage in Vientiane Capital, except for free baby deliveries, antenatal/postnatal care visits, and free admission for children under age 5 at health centres and district hospitals. For the poor, however, there are no provisions that ensure their free access to health centres and district hospitals. Informal sector workers and their families living in Vientiane Capital can seek contributory coverage, on a voluntary basis, with the CBHI scheme or through LSSO voluntary coverage, but this type of coverage does not generally result in significant population coverage expansion.

The extension of NHI coverage to Vientiane Capital is being considered by the Government for achieving universal health coverage across the whole country. The following analysis is considering two options to inform policy decisions in this space:

- An "ideal" scenario of extension of the government subsidy policy to all workers in the informal economy in Vientiane Capital. This scenario is theorical, since the Government is not in a financial position to realize it in the near future. It does, however, show the extent of additional financing necessary for complete health coverage throughout the country.
- A scenario wherein coverage is provided to selected vulnerable groups in Vientiane Capital, targeting the poor, children below age 5 and pregnant women, who would be covered for care provision at all health facilities.

The number of additional persons covered under each of these scenarios and their financial implications from 2024 appear in table 4.10.

4.2.1. Extension of coverage to all people in Vientiane

An expansion of coverage to all persons in Vientiane Capital would represent the addition of approximately 680,421 covered persons and a net funding requirement for the State of 175 billion kip in 2024 (0.06 per cent of GDP), when considering the increase of copayments proposed in the draft decree.

4.2.2. Extension of coverage limited to vulnerable groups in Vientiane

With coverage in Vientiane limited to selected vulnerable groups (the poor, children below age 5 and pregnant women), this would represent approximately 119,352 persons in 2024 and health expenditures estimated at 32 billion kip in that same year.

▶Table 4.10. Projected funding requirements for the extension of coverage to Vientiane Capital (billion kip)

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Coverage extended to all persons in Vientiane Capital									
Additional persons covered	680 421	683 368	685 584	687 054	687 757	687 670	686 774	618.6	672.2
Total health expenditures	182.7	193.9	205.5	217.6	230.2	243.2	256.7	131.6	147.8
Copayment income	8.0	9.2	10.6	12.0	13.6	15.2	17.0	487.0	524.4
Net funding requirements	**174.8**	**184.6**	**194.9**	**205.6**	**216.6**	**228.0**	**239.7**	**0.120%**	**0.121%**
Coverage in Vientiane Capital limited to vulnerable groups									
Number of persons (vulnerable)	119 352	117 387	115 573	113 808	112 116	110 513	108 999	347.7	384.8
Total health expenditures	32.1	33.3	34.6	36.0	37.5	39.1	40.7	300.8	328.8
Copayment income	-	-	-	-	-	-	-	46.9	56.0
Net funding requirements	**32.1**	**33.3**	**34.6**	**36.0**	**37.5**	**39.1**	**40.7**	**1.44%**	**1.46%**

– = nil.

Conclusion

The present combination of government subsidies, NSSF contributions and copayments by users are not sufficient to support the cost of health services in the Lao People's Democratic Republic.

The amendments to the NHI presently under preparation by the Government, which provide for an increase of provider payment rates, capitation amounts and copayments, represent a step in the right direction for supporting health providers and improving the delivery of health services, but the increases presently envisaged would not fully compensate for the very high inflation observed in the Lao People's Democratic Republic in 2022 and 2023.

The contribution rate of 1.25 per cent transferred from the NSSF to the NHI does not cover the full cost of health services received by NSSF members and their families. The contribution rate should be increased to 1.5 per cent, as a first step, and revised periodically in the future in line with recommendations from subsequent actuarial valuations. Any increase of the NSSF contribution rate for health insurance should be conditional on a simultaneous increase of the other parameters of the NHI (provider payment rates and copayment rates) to avoid a situation wherein NSSF members would increase their share of the financing of the scheme without obtaining additional benefits and possibly subsidizing the informal sector.

NHI coverage should be extended to Vientiane Capital, with the first stage being to extend coverage to vulnerable groups.

It would be important to undertake a new hospital costing exercise to obtain a recent and precise estimate of unit costs for all types of health providers and to inform rate setting in the future.

It would also be useful to envisage additional sources of healthcare financing, such as taxes on tobacco and alcohol.

Appendix 1. Summary of the Law on Health Insurance

The objective of the Lao National Health Insurance scheme is to offer universal access to healthcare in the country.

A1.1. Membership

Three components of the scheme have been set up for specific categories of insured persons:

1. Informal sector, through copayments at the point of service;
2. Formal sector, through NSSF mandatory contributions; and
3. Vulnerable groups, exempted from copayments.

Participation of employees in the formal sector is managed through the NSSF. Participation of other groups is managed by the NHIB. There is no registration of members for the informal sector. The whole population is covered and entitled to NHI benefits in all provinces, except for Vientiane Capital where health coverage is targeted to specific groups (NSSF members and persons voluntarily insured through Community-Based Health Insurance).

A1.2. Benefits

Benefits offered by the scheme include medical and non-medical benefits.

A1.2.1. Medical benefits

Medical benefits include:

- consultation and diagnosis services;
- medical treatment;
- physical rehabilitation;
- promotion and prevention.

Members are assigned a health facility (contracted hospital/clinic) through which they receive care. Members insured under the formal sector schemes must register with a hospital, whereas the other groups can seek care freely at the village and district level. Healthcare can be received abroad under specific circumstances.

A1.2.2. Non-medical benefits

Non-medical benefits include food and transportation fees for the poor (including deliveries and for children below the age of 5), as well as ambulance fees for referral cases. For the non-poor, food allowances and transportation are only paid for deliveries, and not for children under 5.

A1.2.3. Excluded health services

The following health services are not covered by the scheme:

- services already covered by a third party or vertical programme (for example, leprosy, HIV/AIDS, tuberculosis, malaria);
- aesthetic/cosmetic services;
- VIP hospital room;
- annual medical check-up on personal demand;
- healthcare abroad not covered under article 20 of the law.

A1.3. Financing

NHI financing. The financing of the NHI is based on government transfers and members' contributions. An NHI Fund is contemplated under the law for the financial operations of the scheme, but such a fund has not yet been established (all financial operations relating to services subsidized from the national budget are channelled through a dedicated account within the National Treasury).

The NHI Fund receives contributions from the following sources:

- Contributions from the Government, based on an annual contribution plan approved by the National Assembly. This refers to a fixed subsidy allocated to the NHIB from the national budget, not linked to the number of persons covered.
- Contributions from NSSF members at a rate of 1.25 per cent of earnings.
- Copayments from informal sector workers receiving health services, as shown in table A1.1.
- Other income, including grants from individuals, domestic and international organizations, and a share from the tobacco control fund (in theory, but no mechanism in place yet).

▶Table A1.1. NHI copayment rates (kip per visit)

Type of service	Type of health facility			
	Health centre	District hospital	Provincial hospital	Regional hospital
Outpatient	5 000	10 000	15 000	20 000
Inpatient	5 000	30 000	30 000	30 000

Copayments are not required from the following persons receiving health services:

- poor households (as determined annually by district authorities);
- pregnant women;
- children below age 5 (inpatient care only);
- monks and novices; and
- persons insured under the NSSF.

Non-Lao citizens must pay the full cost of services established by the hospital.

CBHI financing. Contributions to CBHI vary according to family size and the chosen product, as follows:

▶Table A1.2. CBHI premium rates (kip)

Family size (no. of persons)	Product 1		Product 2	
	Annual	Monthly	Annual	Monthly
1	300 000	25 000	210 000	17 500
2–4	500 000	41 667	360 000	30 000
5–7	650 000	54 167	450 000	37 500
7+	700 000	58 333	500 000	41 667

A1.4. Payment rates to healthcare providers

Table A1.3 presents the payment rates to health providers, by type of service and type of health provider. These payment rates are presently under revision.

▶Table A1.3. NHI payment rates to healthcare providers (kip)

Type of service	Health centre	Non-referral cases				Referral cases		
		District hospital B	District hospital A	Provincial hospital	Regional hospital	District hospital A	Provincial hospital	Regional hospital/ Central hospital
OPD	Capitation	Capitation	Capitation	Capitation	Capitation	90 000	90 000	100 000
OPD+CT and MRI	Capitation	Capitation	Capitation	Capitation	Capitation	n/a	400 000	500 000
IPD	Capitation	225 000	275 000	400 000	500 000	800 000	900 000	1 000 000
Normal delivery	Capitation	175 000	200 000	250 000	300 000	200 000	250 000	300 000
Caesarean	n/a	n/a	1 500 000	1 800 000	2 000 000	1 500 000	1 800 000	2 000 000
Minor surgery	Capitation	75 000	100 000	150 000	200 000	100 000	150 000	200 000
Medium surgery	n/a	n/a	1 500 000	1 800 000	2 000 000	1 500 000	1 800 000	2 000 000
Important surgery	n/a	n/a	2 000 000	2 500 000	3 000 000	2 000 000	2 500 000	3 000 000

n/a = service not available through this type of provider.

Capitation fees vary according to the type of health facility and the utilization rate, as shown in table A1.4.

▶ Table A1.4. NHI capitation fees (kip)

Utilization rate	< 0.19	0.20–0.39	0.40–0.59	0.60–0.79	> 0.80	Per case
Regional hospital	12 000	19 000	32 000	45 000	57 000	80 000
Provincial hospital	9 000	14 000	23 000	32 000	41 000	56 000
District hospital (type A)	5 000	10 000	15 000	19 000	24 000	37 000
District hospital (type B)	4 000	8 000	13 000	17 000	21 000	33 000
Health centre (OPD & IPD)	4 000	7 000	11 000	14 000	18 000	25 000

Appendix 2. Methodology of the actuarial assessment

This actuarial review makes use of the comprehensive methodology developed by the ILO for reviewing the long-term actuarial and financial status of national social security schemes. These modelling tools include a population model, an economic model, a labour force model and a wage model.

The actuarial valuation starts with a projection of the future demographic and economic environment of the Lao People's Democratic Republic. Next, projection factors specific to the NHI are determined and used in combination with the demographic/economic framework.

A2.1. Modelling the demographic and economic environment

The use of the ILO actuarial projection model requires the development of demographic and economic assumptions related to the general population, the economic growth, the labour market, and the increase and distribution of wages. Other economic assumptions relate to the future rate of return on investments, the indexation of benefits and the adjustment of parameters like the maximum insurable earnings and the future level of flat-rate benefits.

The selection of projection assumptions takes into account the recent experience of the social security schemes to the extent this information was available. The assumptions are selected to reflect long-term trends rather than giving undue weight to recent experience.

A2.1.1. General population

The general population is projected starting with the most current data on the general population, and applying appropriate mortality, fertility and migration assumptions.

A2.1.2. Economic growth

Increase of the productivity of labour, the wage share of GDP and inflation rates are exogenous inputs to the economic model. The long-term GDP growth is the result of assumptions concerning the future evolution of the labour force, the employment rate in the labour force, and labour productivity.

A2.1.3. Labour force, employment and insured population

The projection of the labour force – that is, the number of persons available for work – is obtained by applying assumed labour force participation rates to the projected number of persons in the general population. Employment rates are assumed for the future, and unemployment is calculated as the difference between labour force and employment. This exercise is performed separately for salaried and self-employed persons.

The model assumes movement of participants between the groups of active and inactive insured persons. This movement is simulated by comparing the projected active insured persons for two successive years and for each age/sex cell. If the number of persons in that cell decreases by more than the number of persons

dying or becoming disabled during the year (for ages at which retirement is not possible), then the difference is considered as new inactive persons. In the reverse case, it is presumed that former inactive persons have reintegrated into the active insured population.

A2.1.4. Wages

Based on an allocation of total GDP to capital income and to labour income, a starting average wage is calculated by dividing total wages in the GDP by the total number of employed persons.

In the medium term, real wage development is checked against the labour productivity growth. In specific labour market situations, wages might grow at a faster or slower pace than productivity. However, due to the long-term perspective of the present review, the real wage increase is assumed to gradually converge with the real increase in labour productivity. It is expected that wages will adjust to efficiency levels over time.

Wage distribution assumptions are also needed to simulate the possible impact of the social protection system on the distribution of income, for example, through minimum and maximum pension provisions. Assumptions on the differentiation of wages by age and sex are established; as are assumptions on the dispersion of wages between income groups.

A2.2. Projecting healthcare expenditures

The projection of healthcare expenditures is determined through the following steps:

1. Split the total population of the country between Vientiane Capital and the 17 provinces.
2. Split the population of the 17 provinces between the formal sector and the informal sector, in line with labour force projections. Split the population of Vientiane Capital among NSSF members, CBHI members and persons uncovered by health insurance.
3. Apply NHI utilization rates by type of provider, doing so separately for the 17 provinces (informal and formal sectors separately), the NSSF members in Vientiane Capital, and the CBHI members.
4. Apply unit cost reference rates to the number of cases for each health provider.
5. Add the projected costs for transportation and food.
6. Determine copayment income by excluding specific groups exempted from making copayments.

Appendix 3. Projected demographic and macroeconomic environment of the Lao People's Democratic Republic

Future income and expenditure of a social insurance system are linked to changes in: the size and age structure of the population of the country, employment levels, economic and wage growth, inflation, and rates of return on investments. Therefore, in order to estimate future social security finances, projections of the country's total population and economic activity are required. Demographic projections provide estimates of the size and composition of the labour force; while projections of the GDP and the growth of labour productivity are necessary to project the number of workers and their earnings. Demographic and macroeconomic variables were projected following an analysis of past trends and an estimate of plausible future experience. Population and economic projections are an intermediary step required to derive social security projections.

A3.1. Population projection

In the last official population census, which took place in 2015, the total resident population of the Lao People's Democratic Republic was estimated at 6,492,000 persons. The Lao Statistics Bureau (LSB) conducted population projections up to 2045 based on the 2015 census.[1] Demographic projections presented hereunder fit with population projections published as part of the United Nations' World Population Prospects (UNWPP), with an adjustment of fertility assumptions to match the LSB projections until 2045.[2]

Actuarial projections of the Lao health system require a separation of the total population between Vientiane Capital and the 17 provinces, because coverage varies by region. For that purpose, the LSB projections for Vientiane Capital were used.

The determinants of future population changes are fertility, mortality and net migration. Fertility rates determine the number of births; while mortality rates determine how many and at what ages people are expected to die. Net migration represents the difference between the number of people who permanently enter and leave the Lao People's Democratic Republic and is the most volatile of the three factors.

1 Three projection scenarios were developed using different assumptions regarding the speed of fertility decline. All three scenarios assume the same rate of improvement of mortality (reaching 76 years for females and 72 years for males in 2045) and assume zero net international migration.

2 United Nations, Department of Economic and Social Affairs, Population Division, *World Population Prospects 2022.*

A3.1.1.Initial population

As a starting point for the projection, it was first necessary to establish the initial population, by age and by sex, as of the middle of 2021. The Lao Statistics Bureau prepares inter-census population estimates. According to the most recent estimates, the total population of the country is estimated at 7,337,786 persons in 2021. Table A3.1 presents a summary, by age group and by sex, of the population of the Lao People's Democratic Republic in 2021.

▶ Table A3.1. Population of the Lao People's Democratic Republic by age and sex, 2021

Age group	Male	Female	Total
0–14	1 163 416	1 129 278	2 292 694
15–24	705 549	691 419	1 396 968
25–59	1 557 581	1 560 842	3 118 423
60 and over	249 606	280 095	529 701
Total	**3 676 152**	**3 661 634**	**7 337 786**

A3.1.2. Fertility

The total fertility rate (TFR) represents the average number of children each woman of childbearing age would have if she had all her children in a particular year. If there is no migration, a TFR of 2.1 is required for each generation to replace itself.

The starting point for projecting age-specific fertility rates was the UN projection (medium variant). The TFR starts at 2.4 in 2021 and decreases to reach the ultimate assumption of 1.7 in 2100 and remains constant thereafter.

It is also assumed that the ratio of male to female births will stay constant at 1.05, which is the ratio used in the UNWPP population projection.

A3.1.3. Mortality

Life tables are taken from UNWPP 2022. Life expectancy at birth in 2021 is estimated at 66.2 years for males and 70.1 years for females. Life expectancy at advanced ages is a key driver of health expenditures. At age 60, life expectancy is estimated at 15.5 years for males and 17.6 years for females in 2021.

Mortality improvements are assumed to occur in accordance with UN estimates (at medium pace) based on their projected life tables at an exact age. Under this pattern of mortality improvement, it is projected that in 2070 life expectancy at birth will reach 75.5 years for males and 80.4 years for females; while life expectancy at age 60 will be 19.9 years for males and 23.0 years for females. Table 3.2 presents life expectancy at different points in time until 2100.

A3.1.4. Migration

Precise data on migration are not available in the Lao People's Democratic Republic. Net migration has been assumed to occur in line with the UN projection (medium variant), with a net international migration of 10,000 per year for the whole projection period.

Table A3.2 summarizes the evolution of the key demographic assumptions from 2022 to 2100. A negative figure for migration means that emigration from the country is greater than immigration into the country.

▶ **Table A3.2. Key demographic assumptions, 2022–2100**

Year	Total fertility rate	Life expectancy at birth		Net migration (annual)
		Male	Female	
2022	2.3	67.0	71.2	-10 000
2030	2.0	68.8	73.3	-10 000
2040	1.9	70.6	75.6	-10 000
2050	1.8	72.2	77.4	-10 000
2060	1.8	73.8	78.9	-10 000
2070	1.8	75.5	80.4	-10 000
2080	1.8	77.2	81.7	-10 000
2090	1.7	79.0	82.9	-10 000
2100	1.7	80.7	84.1	-10 000

A3.1.5. Projected population

Figure A3.1 presents the projected population of the Lao People's Democratic Republic from 2022 to 2100 separated into three age categories: children (ages 0–15), persons who can potentially contribute to the scheme (ages 16–59) and persons aged 60 and over. The evolution of the relative size of each age group – and notably the decrease of the population of children and the increase of the number of persons at pensionable age – illustrates the projected ageing of the population of the Lao People's Democratic Republic.

▶ **Figure A3.1. Projected population of the Lao People's Democratic Republic, by age group, 2022–2100**

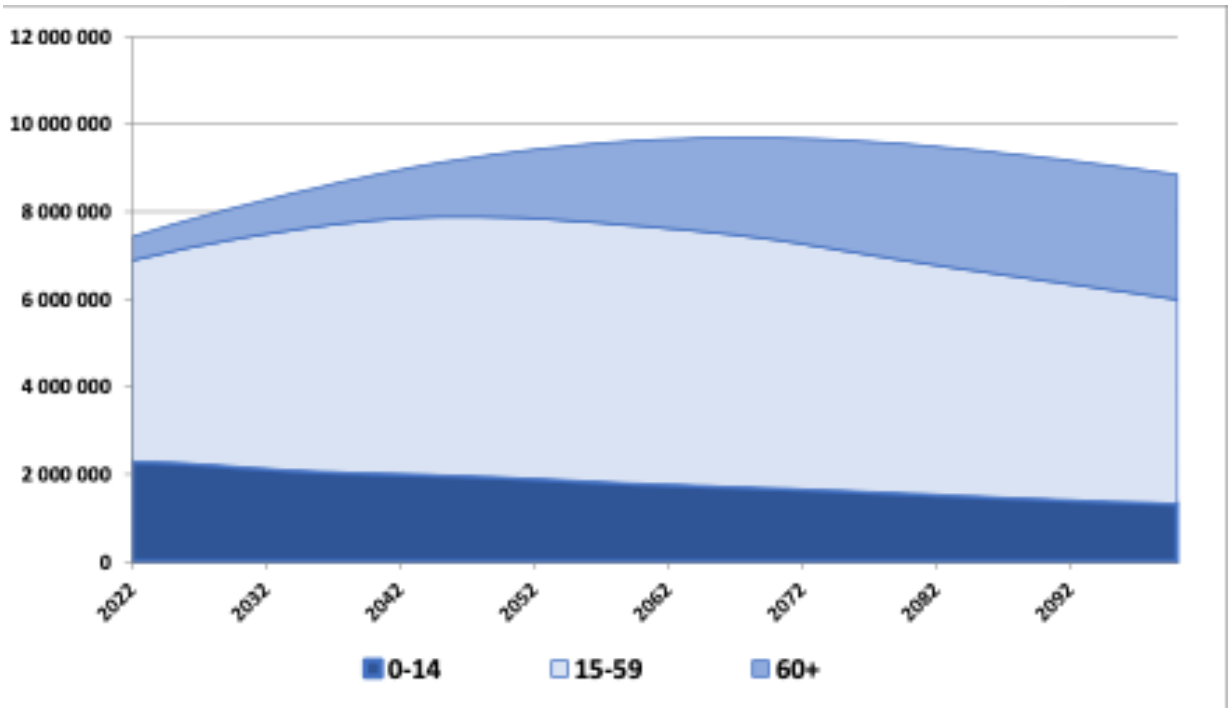


Table A3.3 presents detailed population projections. It is observed that the total population of the Lao People's Democratic Republic will increase by 30 per cent between 2022 and 2070, increasing from 7,429,253 in 2022 to 9,686,041 in 2070, and slightly decreasing thereafter. What is a cause for concern in the context of the health insurance system is that the number of persons aged 60 and over will grow significantly over time (with increased life expectancy), which will drive costs up, as health expenditures increase with age. The population aged 60 and over will grow from 545,483 in 2022 to 2,326,441 in 2070 and 2,855,790 in 2100; while the population at working age (15–59) will decrease after 2060. The ratio of the number of working-age persons (ages 15–59) to the number of persons aged 60 and over will thus fall from 8.4 to just 1.6 over the next 80 years.

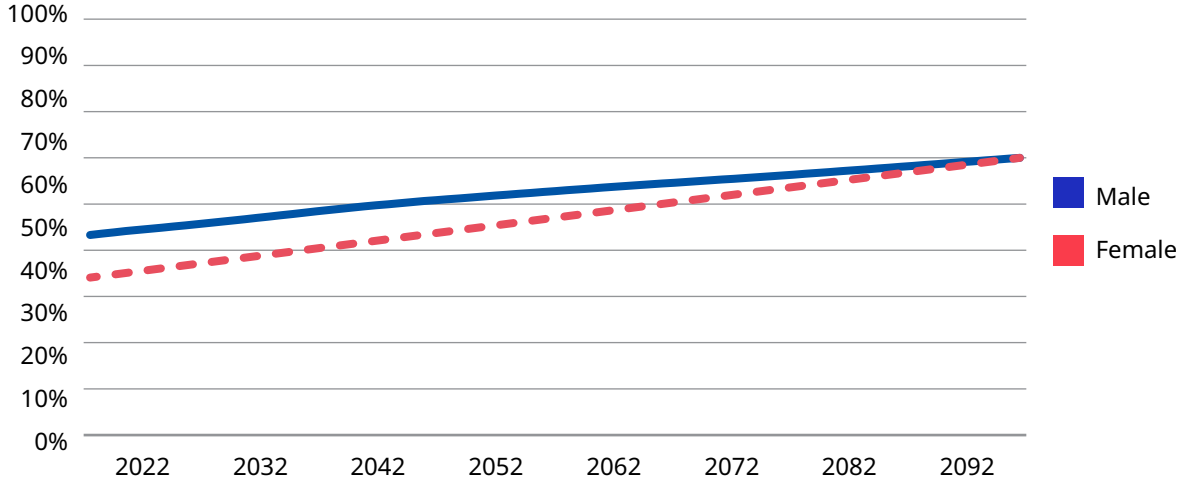
▶ Table A3.3. Projected population of the Lao People's Democratic Republic, 2022–2100

Year	Age group				Ratio 16–59 / 60+
	0–14	15–59	60 and over	Total	
2022	2 291 743	4 592 027	545 483	7 429 253	8.4
2030	2 170 494	5 218 536	726 443	8 115 472	7.2
2040	2 026 176	5 777 078	1 026 104	8 829 358	5.6
2050	1 928 793	5 943 441	1 471 739	9 343 973	4.0
2060	1 788 278	5 883 853	1 952 457	9 624 589	3.0
2070	1 683 268	5 676 332	2 326 441	9 686 041	2.4
2080	1 563 416	5 308 502	2 665 502	9 537 419	2.0
2090	1 435 616	4 996 195	2 806 313	9 238 124	1.8
2100	1 331 060	4 660 545	2 855 790	8 847 396	1.6

A3.2. Labour force projection

In 2022, the labour force (active population) represented only 48.7 per cent of the working-age population (ages 15–69): 53.3 per cent for males and 44.1 per cent for females. It is assumed that the active population will gradually increase to reach 70 per cent of the working-age population in 2100. Figure A3.2 shows the projected growth of labour force participation rates by sex over the next 80 years.

▶ Figure A3.2. Projected total participation rate (ages 15–69), by sex, 2022–2100



The unemployment rate is very low in the Lao People's Democratic Republic according to the 2022 Labour Force Survey (2.6 per cent of the population aged 15–69). It is assumed that age-specific unemployment rates remain constant over time.

Informal employment represents 86 per cent of the total employed population. According to the 2022 Labour Force Survey, a large proportion of the labour force is identified as being involved in "subsistence production work", and hence outside formal employment. For this valuation, it is assumed that the structure of the labour market will evolve in the future such that the proportion of workers in the informal economy will gradually decrease from 86 per cent of total employment in 2022 to 40 per cent in 2100.[3]

Table A3.4 presents the evolution of the labour market balance over time. It shows an important projected increase in formal employment (which represents workers contributing to the social security scheme) resulting from the above assumptions.

▶ Table A3.4. Labour market balance, 2022–2100 (thousands)

	2022	2040	2060	2080	2100
Total population	**7 443**	**9 062**	**9 857**	**9 696**	**8 906**
Male	3 728	4 525	4 891	4 790	4 420
Female	3 714	4 536	4 966	4 907	4 486
Population aged 15–69	**4 946**	**6 577**	**7 150**	**6 629**	**5 782**
Male	2 472	3 291	3 582	3 339	2 933
Female	2 474	3 287	3 568	3 290	2 849
Labour force aged 15–69	**2 408**	**3 598**	**4 274**	**4 262**	**4 048**
Male	1 317	1 913	2 242	2 209	2 053
Female	1 090	1 685	2 032	2 053	1 994
Participation rate	**48.7%**	**54.7%**	**59.8%**	**64.3%**	**70.0%**
Male	53.3%	58.1%	62.6%	66.2%	70.0%
Female	44.1%	51.3%	56.9%	62.4%	70.0%
Total employment	**2 344**	**3 513**	**4 183**	**4 175**	**3 966**
Male	1 277	1 860	2 186	2 157	2 005
Female	1 067	1 653	1 997	2 018	1 961
Formal employment	**325**	**872**	**1 544**	**2 015**	**2 380**
Male	168	452	800	1 038	1 203
Female	157	421	744	977	1 177
Unemployment	**63**	**85**	**91**	**87**	**82**
Male	40	53	56	52	48
Female	23	32	35	34	33

3 The rate of growth of formal employment is higher in short term. This reflects, to some extent, the 5-year plan (2021–2025) of the Lao Government aiming at increasing coverage under the LSSO.

	2022	2040	2060	2080	2100
Unemployment rate	**2.6%**	**2.4%**	**2.1%**	**2.0%**	**2.0%**
Male	3.0%	2.8%	2.5%	2.4%	2.3%
Female	2.1%	1.9%	1.7%	1.7%	1.7%

A3.3. Macroeconomic framework

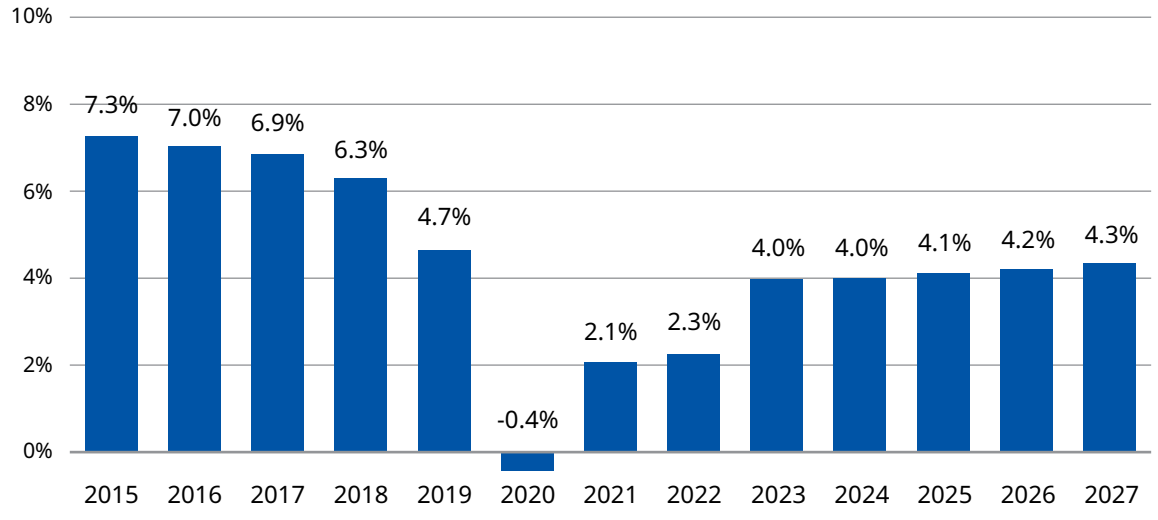
A3.3.1. Productivity of labour

When combining IMF economic forecasts and the labour force projections described above, labour productivity growth is estimated to gradually increase to a level around 1.5 per cent until 2027. It is projected that labour productivity growth will be constant at 1.5 per cent from 2028.

A3.3.2. Economic growth

According to the IMF, the Lao People's Democratic Republic's economic performance, in terms of productivity and per capita output growth, has lagged behind other emerging markets in the aftermath of the global financial crisis. Also, the LSB has computed the impact on the economy of the COVID crisis, with the IMF providing an updated forecast that includes the lasting impact of the pandemic. As seen in figure A3.3, following a period of growth before 2020, there was a significant decrease in 2020. It is expected that growth will return to higher values following recovering from the health crisis.

▶ Figure A3.3. Real GDP growth of the Lao People's Democratic Republic, real and forecasted, 2015–2027 (percentage)



Source: IMF, *World Economic Outlook*, October 2023.

Real GDP increased by 2.3 per cent in 2022. From 2023 to 2027, real GDP growth is projected to increase from 4.0 to 4.3 per cent, in line with the IMF's World Economic Outlook for the Lao People's Democratic Republic. Thereafter, it is projected to gradually decrease over time because of the slower growth of employment (see table A3.5).

▶ Table A3.5. Projected growth in real GDP, productivity and total employment, 2022–2070

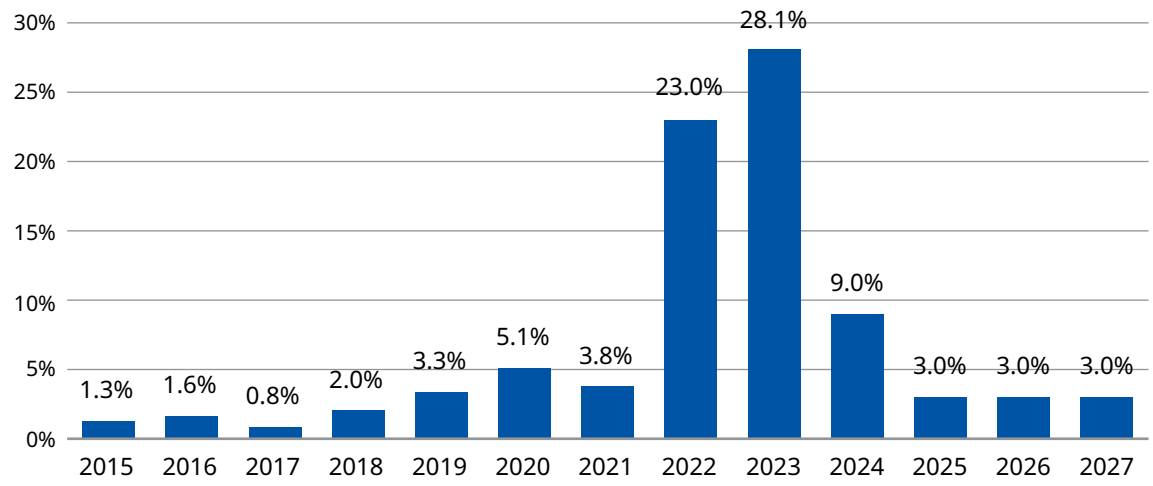
Year	Real GDP growth	Increase in the productivity per worker	Increase in the number of workers
2022	2.3%	0.0%	2.2%
2023	4.0%	1.2%	2.8%
2024	4.0%	1.3%	2.7%
2025	4.1%	1.4%	2.7%
2026	4.2%	1.5%	2.7%
2027	4.3%	1.7%	2.6%
2030	3.9%	1.5%	2.4%
2040	3.2%	1.5%	1.7%
2050	2.3%	1.5%	0.8%
2060	1.8%	1.5%	0.3%
2070	1.4%	1.5%	-0.1%

A3.3.3. Inflation

According to IMF World Economic Outlook (October 2023), the CPI increased by 23 per cent in 2022 and is projected to increase by 28.1 per cent in 2023. The high inflation rate is partly due to the rapid currency devaluation during the first two quarters of 2022.

In line with IMF forecasts, it is assumed that inflation will be 9 per cent in 2024 and will be stable at 3.0 per cent per annum from 2025 onwards.

▶ Figure A3.4. Inflation rate in the Lao People's Democratic Republic, real and forecasted, 2015–2027 (percentage)



Source: IMF, *World Economic Outlook*, October 2023.

A3.3.4. Wage increases

In the future, real wage increases are assumed to gradually converge towards the productivity per worker, as it is expected that wages will adjust to efficiency levels over time. From 2023, nominal wage increases are assumed to be equal to the sum of the inflation rate and productivity growth rate. In that context, the nominal wage increase is assumed to be 4.5 per cent per year from 2025 onwards (see table A3.6).

▶ Table A3.6. Projected inflation rate and wage increase, 2022–2070

Year	Inflation rate	Annual nominal increase of average wage
2022	23.0%	23.0%
2023	28.1%	29.6%
2024	9.0%	10.4%
2025	3.0%	4.5%
2026	3.0%	4.5%
2027	3.0%	4.5%
2030	3.0%	4.5%
2040	3.0%	4.5%
2050	3.0%	4.5%
2060	3.0%	4.5%
2070	3.0%	4.5%

Appendix 4. Data and assumptions used for projecting health expenditures

The financial projections of the NHI are based on the demographic and economic assumptions described in Section 3 above, the projection of the social security insured population described in the NSSF actuarial valuation report, and a series of assumptions specific to health services. Those assumptions related to health services are described hereunder.

A4.1. Distribution of the total population between Vientiane Capital and the 17 provinces

TThe LSB has published population projections for the Lao People's Democratic Republic, including separate projections for Vientiane Capital (see section A3.1 of Appendix 3 for the general methodology, and table A4.4 below for a summary of data).

A4.2. NSSF insured population

The projection of the NSSF insured population appears in the report of the Actuarial Valuation of the National Social Security Fund as of 31 December 2021 (a summary of the projected figures appears in table A4.4).

A4.3. Distribution of the labour force between formal and informal sector

Informal employment represents 86 per cent of the total employed population in 2022. It is assumed that the structure of the labour market will evolve in the future such that the proportion of workers in the informal economy will gradually decrease from 86 per cent in 2022 to 40 per cent in 2100 (see section A3.2 of Appendix 3). Table A4.1 illustrates the future evolution of the labour force according to employment status (formal versus informal).

▶Table A4.1. Projected total employment and formal employment, 2022–2100 (thousands)

	2022	2040	2060	2080	2100
Total employment	**2 344**	**3 513**	**4 183**	**4 175**	**3 966**
Male	1 277	1 860	2 186	2 157	2 005
Female	1 067	1 653	1 997	2 018	1 961
Formal employment	**309**	**1 013**	**1 937**	**2 626**	**3 173**
Male	179	549	1 025	1 364	1 604
Female	130	463	912	1 263	1 569

A4.4. NHI utilization rates

For the informal sector, NHI utilization rates are based on the study *Costing of Public Health Facilities in Lao PDR: Summary of Results, Budget Projections, and Proposed Revision of NHI Provider Payment Rates* (March 2022) – see table A4.5. For NSSF members in Vientiane Capital, the rates are based on data extracted from DHIS-2 (see table A4.6). For CBHI, the utilization rate is based on data extracted from DHIS-2 (see table A4.7). Utilization rates are projected to increase by 5 per cent per year for OPD (except for NSSF members, for whom they are assumed to remain constant over time) and by 2 per cent per year for IPD.

For the analysis of reform scenarios, IPD cases are separated in those with surgery and those without surgery.

A4.5. Unit cost reference rates

Unit cost reference rates are based on the study *Costing of Public Health Facilities in Lao PDR: Summary of Results, Budget Projections, and Proposed Revision of NHI Provider Payment Rates* (March 2022) – see table A4.2.

Under the status quo scenario, it was assumed that there would be no increase in 2023. From 2024 onwards, a 5 per cent annual increase is assumed (see table A4.8).

▶Table A4.2. Unit cost reference rates applicable in 2022, by type of health facility

Type of health facility	Unit cost reference rate
OPD	
Central hospitals (referrals)	170 000
Regional hospitals	165 000
Provincial hospitals	**99 000**
District hospitals Type A	50 000
District hospitals Type B	56 000
Health centres	24 000
IPD	
Central hospitals (referrals)	2 188 000
Regional hospitals	1 178 000

Type of health facility	Unit cost reference rate
Provincial hospitals	890 000
District hospitals Type A	435 000
District hospitals Type B	355 000
Health centres	157 000

A4.6. Costs for transportation and food

Assumptions around costs for transportation and food are based on the study *Costing of Public Health Facilities in Lao PDR: Summary of Results, Budget Projections, and Proposed Revision of NHI Provider Payment Rates* (March 2022).

A4.7. Copayment exemption

Data from exempted groups (children below the age of 5, pregnant women) were extracted from DHIS-2. The number of persons in each group exempted from copayment appears in table A4.3, based on DHIS-2 data.

The number of cases exempted from copayment is projected over time according to the following assumptions:

- Children below the age of 5: rate of growth of the population of the country aged below 5;
- Pregnant women: rate of growth of the number of births in the country;
- Poor households: rate of growth of the total population of the country.

In the estimate of the total amount of copayment exemptions, a global utilization rate of 12.5 per cent is assumed for the poor, corresponding to 50 per cent of the utilization rate of other NHI-covered persons.

▶ Table A4.3. Estimate of the number of cases exempted from copayments (2022)

Type of facility	Children below 5	Pregnant women	Poor
Outpatient			
Regional hospital	40 552	14 911	31,129
Provincial hospital	138 445	32 302	67,435
District hospital A	25 695	3 257	6,403
District hospital B	7 971	795	2,047
Health centre	839 970	96 744	215,986
Inpatient			
Regional hospital	23 537	11 738	11,970
Provincial hospital	36 451	37 850	23,364
District hospital A	1 649	1 208	559
District hospital B	760	507	228
Health centre	6 134	30 274	9,450
Total number of cases	1,121,164	229 586	368 570

Source: DHIS-2.

A4.8. Projected covered populations, utilization rates and unit cost reference rates

Table A4.4 presents the projected covered populations of each insured group. Tables A4.5 to A4.7 present the projected utilization rates of each separate group, namely:

- informal sector (17 provinces);
- NSSF members (17 provinces);
- NSSF members (Vientiane Capital); and
- CBHI.

Table A4.4 shows the projected unit (cost) reference rates under the status quo.

▶Table A4.4. Projected Lao population according to health insurance coverage, 2022–2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
Vientiane Capital									
NSSF members	286 614	307 330	328 793	350 990	373 918	397 569	421 948	447 053	472 902
CBHI members	27 095	29 053	31 082	33 181	35 348	37 584	39 889	42 262	44 706
Not covered	671 693	668 848	664 845	659 668	653 577	646 568	638 625	629 734	619 878
Total	**985 402**	**1 005 232**	**1 024 721**	**1 043 838**	**1 062 843**	**1 081 721**	**1 100 462**	**1 119 049**	**1 137 486**
Provinces									
NSSF members	593 163	636 036	680 455	726 391	773 842	822 790	873 244	925 199	978 697
Informal sector	5 864 230	5 904 523	5 941 551	5 975 022	6 005 857	6 033 761	6 058 660	6 080 368	6 098 821
Total	**6 457 393**	**6 540 559**	**6 622 006**	**6 701 413**	**6 779 699**	**6 856 551**	**6 931 904**	**7 005 567**	**7 077 518**
Total population	7 442 795	7 545 791	7 646 727	7 745 251	7 842 542	7 938 272	8 032 366	8 124 616	8 215 004

▶Table A4.5. Projected utilization rates – Informal sector (17 provinces), 2022–2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
OPD (visit/person/year)	**0.609**	**0.640**	**0.672**	**0.706**	**0.741**	**0.778**	**0.817**	**0.858**	**0.900**
Regional hospitals	0.012	0.013	0.014	0.014	0.015	0.016	0.016	0.017	0.018
Provincial hospitals	0.058	0.060	0.063	0.067	0.070	0.073	0.077	0.081	0.085
District hospitals Type A	0.071	0.074	0.078	0.082	0.086	0.090	0.095	0.100	0.105
District hospitals Type B	0.144	0.151	0.158	0.166	0.175	0.183	0.193	0.202	0.212
Health centres	0.325	0.341	0.358	0.376	0.395	0.415	0.436	0.458	0.480
IPD (episode/person/year)	**0.062**	**0.063**	**0.065**	**0.066**	**0.067**	**0.069**	**0.070**	**0.071**	**0.073**
Regional hospitals	0.009	0.009	0.009	0.010	0.010	0.010	0.010	0.010	0.011
Provincial hospitals	0.016	0.016	0.017	0.017	0.017	0.018	0.018	0.019	0.019
District hospitals Type A	0.011	0.011	0.012	0.012	0.012	0.012	0.013	0.013	0.013
District hospitals Type B	0.014	0.015	0.015	0.015	0.016	0.016	0.016	0.016	0.017
Health centres	0.012	0.012	0.012	0.012	0.013	0.013	0.013	0.013	0.014

▶Table A4.6. Projected utilization rates – NSSF members (17 provinces), 2022–2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
OPD	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**
Regional hospitals	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031	0.031
Provincial hospitals	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148	0.148
District hospitals Type A	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182	0.182
District hospitals Type B	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369	0.369
Health centres	0.834	0.834	0.834	0.834	0.834	0.834	0.834	0.834	0.834
IPD	**0.107**	**0.110**	**0.112**	**0.114**	**0.116**	**0.119**	**0.121**	**0.123**	**0.126**
Regional hospitals	0.016	0.016	0.016	0.016	0.017	0.017	0.017	0.018	0.018
Provincial hospitals	0.028	0.028	0.029	0.029	0.030	0.031	0.031	0.032	0.033
District hospitals Type A	0.019	0.020	0.020	0.020	0.021	0.021	0.022	0.022	0.023
District hospitals Type B	0.025	0.025	0.026	0.026	0.027	0.027	0.028	0.028	0.029
Health centres	0.020	0.020	0.021	0.021	0.022	0.022	0.022	0.023	0.023

▶Table A4.7. Projected utilization rates – NSSF members (Vientiane Capital), 2022–2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
OPD	**2.315**	**2.315**	**2.315**	**2.315**	**2.315**	**2.315**	**2.315**	**2.315**	**2.315**
Central hospitals	0.895	0.895	0.895	0.895	0.895	0.895	0.895	0.895	0.895
District hospitals	1.420	1.420	1.420	1.420	1.420	1.420	1.420	1.420	1.420
IPD	**0.065**	**0.067**	**0.068**	**0.070**	**0.071**	**0.072**	**0.074**	**0.075**	**0.077**
Central hospitals	0.054	0.056	0.057	0.058	0.059	0.060	0.061	0.063	0.064
District hospitals	0.011	0.011	0.011	0.012	0.012	0.012	0.012	0.013	0.013

▶Table A4.8. Projected utilization rates – CBHI (Vientiane Capital), 2022–2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
OPD	**2.705**	**2.705**	**2.705**	**2.705**	**2.705**	**2.705**	**2.705**	**2.705**	**2.705**
Central hospitals	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482	1.482
District hospitals	1.223	1.223	1.223	1.223	1.223	1.223	1.223	1.223	1.223
IPD	**0.129**	**0.131**	**0.134**	**0.136**	**0.139**	**0.142**	**0.145**	**0.148**	**0.151**
Central hospitals	0.113	0.116	0.118	0.120	0.123	0.125	0.128	0.130	0.133
District hospitals	0.015	0.016	0.016	0.016	0.016	0.017	0.017	0.018	0.018

▶Table A4.9. Projected unit (cost) reference rates (status quo, indexed by 5% from 2024), 2022–2030

	2022	2023	2024	2025	2026	2027	2028	2029	2030
OPD	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**	**1.564**
Central hospitals (referrals)	170 000	170 000	178 500	187 425	196 796	206 636	216 968	227 816	239 207
Regional hospitals	165 000	165 000	173 250	181 913	191 008	200 559	210 586	221 116	232 172
Provincial hospitals	99 000	99 000	103 950	109 148	114 605	120 335	126 352	132 669	139 303
District hospitals Type A	50 000	50 000	52 500	55 125	57 881	60 775	63 814	67 005	70 355
District hospitals Type B	56 000	56 000	58 800	61 740	64 827	68 068	71 472	75 045	78 798
Health centres	**24 000**	**24 000**	**25 200**	**26 460**	**27 783**	**29 172**	**30 631**	**32 162**	**33 770**
IPD	0.016	0.016	0.016	0.016	0.017	0.017	0.017	0.018	0.018
Central hospitals (referrals)	2 188 000	2 188 000	2 297 400	2 412 270	2 532 884	2 659 528	2 792 504	2 932 129	3 078 736
Regional hospitals	1 178 000	1 178 000	1 236 900	1 298 745	1 363 682	1 431 866	1 503 460	1 578 633	1 657 564
Provincial hospitals	890 000	890 000	934 500	981 225	1 030 286	1 081 801	1 135 891	1 192 685	1 252 319
District hospitals Type A	435 000	435 000	456 750	479 588	503 567	528 745	555 182	582 942	612 089
District hospitals Type B	355 000	355 000	372 750	391 388	410 957	431 505	453 080	475 734	499 521
Health centres	157 000	157 000	164 850	173 093	181 747	190 834	200 376	210 395	220 915

Report to the Government

Actuarial assessment of the national health insurance system in Lao People's Democratic Republic

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