IMPACT OF COVID-19 ON
CHILDREN, ADOLESCENTS AND THEIR FAMILIES IN LAO PDR

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Foreword

COVID-19 has shown the interdependency and interconnectedness of countries and why global health issues should be taken seriously by everyone. The pandemic has resulted in millions of deaths, created economic and social hardships and adversely affected education and other sectors.

While the world is racing to find a remedy to the pandemic, most nations are grappling with its potential social and economic impacts. It is estimated that tens of millions of people are at risk of falling into extreme poverty globally. Job losses have pushed about 45 million people into food insecurity, with about 33 million residing in the South and South-East Asian Regions. The number of children with acute malnutrition is also expected to increase substantially.

Lao PDR has made remarkable progress in recent years in many sectors, halving monetary poverty, reducing malnutrition and improving education and health outcomes. However, the COVID-19 pandemic poses a significant threat to the gains made and may negatively affect the country's goal of LDC graduation by 2024.

In response to the potential impact of COVID-19, the Centre for Development Policy Research (CDR) and the Ministry of Planning and Investment (MPI), with the support of UNICEF, UNFPA, the European Union and SIDA, commissioned a study to assess the social and economic impact of the pandemic on children, adolescents and women in Lao PDR. This evidence will guide the Government's possible interventions as well as feed into the current National Social Economic Development Plan (9th NSEDP), while considering the vulnerabilities of the populations in the country. As a country, we are committed to seeking appropriate interventions and initiatives to prevent our people from hardship caused by the social and economic impacts of the COVID-19 pandemic. The evidence in these reports demonstrates our commitment.

On behalf of MPI I would like to acknowledge the technical and financial support provided by our partners – UNICEF, the European Union, UNFPA, SIDA and EPRI – in the production of these reports and briefs on the social and economic impacts of COVID-19 on children, adolescents and women in Lao PDR. We will continue to strengthen our partnerships to address risks and vulnerabilities in Lao PDR, especially during emergencies. I, therefore, urge all respective ministries, departments and agencies to align their interventions with the recommendations in these reports and policy briefs to reduce the social and economic impacts of the pandemic.

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Acronyms

ADB	Asian Development Bank
ANC	Antenatal care
EAP	East Asia and Pacific
ECE	Early Childhood Education
FAO	Food and Agricultural Organization
FSN	Food Security and Nutrition
GDP	Gross Domestic Product
IFAD	International Fund for Agricultural Development
IFPRI	International Food Policy Research Institute
ILO	International Labour Organization
IOM	International Organization for Migration
IRC	International Rescue Committee
LECS	Lao PDR Expenditure and Consumption Survey
LSB	Lao Statistics Bureau
LSIS II	Lao Social Indicator Survey
MMR	Maternal Mortality Rate
MoH	Ministry of Health
MSME	Micro, Small and Medium Enterprises
NAR	Net Attendance Rate
NCAW	National Commission for the Advancement of Women
NCD-RisC	Non-Communicable Disease Risk Factor Collaboration
NCMC	National Commission for Mothers and Children
NHI	National Health Insurance
NPI	Non pharmaceutical interventions
NSSF	National Social Security Fund
OCHA	Office for the Coordination of Humanitarian Affairs
OECD	Organization for Economic Co-operation and Development
OHCHR	Office of the United Nations High Commissioner for Human Rights
PNC	Postnatal care
SDGs	Sustainable Development Goals
SMEs	Small and Medium Enterprises
SRH	Sexual and Reproductive Health
UN	United Nations
UNDP	United Nations Development Programme
UNFPA	United Nations Population Fund
UNICEF	United Nations Children's Fund
USAID	United States Agency for International Development
WASH	Water, Sanitation, and Hygiene
WFP	World Food Programme
WHO	World Health Organization
WTO	World Trade Organization

Introduction

The COVID-19 pandemic first emerged as a health crisis but has rapidly evolved into a global crisis, threatening survival – economically, socially, politically and epidemiologically – with grave consequences for human development, economic stability and sustenance. In Lao PDR, soon after the first case of COVID-19 was reported in March 2020, the government swiftly implemented a nationwide lockdown which was gradually lifted from mid-May. As a result, the epidemiological impact of the pandemic on Lao PDR has not been severe. The impact of the pandemic in Lao has been predominantly socioeconomic due to the breakdown in domestic and regional supply chains, business closures, livelihood disruptions and income losses.

Overall, the pandemic has "seriously affected Vientiane's development objectives, exacerbated existing vulnerabilities and disrupted progress towards smooth graduation from least developed country status," according to the Prime Minister's address during the United Nations General Assembly plenary on 3 December 2020.[1] The impact of the crisis has been unprecedented and governments around the world are navigating important choices, thinking through the contours of the new normal. More caveats, assumptions and speculations feed into every policy choice, which will affect the rate of economic recovery and rebound.

This report estimates the potential effect of COVID-19 on socioeconomic indicators of interest in Lao PDR along with secondary data sources, existing data and information to identify the risk drivers through a review of relevant literature from Lao PDR and globally. This document explores the _cost of inaction_ and the _benefits of action_ that the Government of Lao PDR can realise as part of its response towards the COVID-19 pandemic.

The analysis is based on microsimulation estimates of the socioeconomic impact of the pandemic in Lao PDR based on different mitigation scenarios. Without adequate action, the pandemic can have imminent as well as long-term socioeconomic effects across multiple dimensions such as food security, poverty, health, education, etc. with intergenerational reverberations.[2] This provides an impetus for the Government of Lao PDR to make intersectoral investments which will contribute to economic, social and human development in the country amid the crisis.[3]

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[1]   United Nations, 'General Assembly Plenary Thirty-First Special Session, 2nd meeting', 2020.
[2]   Further detailed in section 2.
[3]   Further detailed in section 3.

This paper is structured as follows: Section 1 presents a snapshot of the data and methodological framework used in determining the socioeconomic impact of COVID-19 in Lao. Section 2 presents the impact in Lao PDR of COVID-19 on the dimensions of livelihoods, poverty, food insecurity, health, education, child marriage, child labour, child violence and, ultimately, how all these risks interact with climate threats in the context of the country. The results focus on both quantifiable socioeconomic indicators and issues that COVID-19 can either exacerbate directly and/or exploit as a result of implicit structural vulnerabilities. This is followed by concluding remarks.

This microsimulation analysis complements the Lao PDR risk report, both of which were commissioned in May 2020 when the COVID-19 crisis was still unfolding. Hence, the assumptions reflect the most accurate suppositions based on the intensity and duration surrounding the pandemic at that point in time. However, as the pandemic has progressed during the year, some of these assumptions have been modified. For instance, in early 2020, the impact of the crisis was expected to be far more severe for Lao PDR and the East Asia and Pacific region. However, swift and timely NPI responses in the region have mitigated the worst of the health shocks and, as a result, allowed for a gradual re-opening of the regional economy.

Consequently, Lao PDR and neighbouring countries have managed to minimise the socioeconomic impact of the crisis, particularly on education for children and on health care systems. Therefore, several of the initially modelled impacts, which reflect the initial globally accepted assumptions about the trajectory of the crisis but do not adequately reflect how the crisis has unfolded in Lao PDR, have been moved from the main report into the annex.

Section 1:
Data and methodological framework[4]

A two-stage simulation model which leverages inherent household-level heterogeneity to assess the possible impacts of COVID-19 on certain socioeconomic indicators in Lao PDR is estimated as shown below.

Figure 1: Methodological framework

Data	LSIS II (2017-2018): The Lao PDR Socioeconomic Indicator Survey
	MICS 12017): The Multiple Indicator Cluster Survey

Methodology to estimate sociaoeconomic impact	Utilized a dynamic multiperiod microsimulation model at the household level to study the individual and household level effects of the global pandemic.
	Performed a sensitivity analysis by which different levels of impact magnitude are assessed.
	I. **Scenario I:** low impact, which refers to weak impacts of mitigation measures such as shorter disruption and less strict lockdowns and social distancing measures that cause limited disruption for economic activities and human capital accumulation services
	2. **Scenario 2:** medium impact, which refers to comparatively longer and more intense mitigation measures that cause more disruption for economic activities and human capital accumulation services
	3. **Scenario 3:** high impact; which refers to extremely long and far more intense mitigation measures that cause extensive disruption for economic activities and human capital accumulation services
	Determined the impact on the indicators of interest— a range of socioeconomic and health outcomes, based on the different levels of mitigation
	I. Risk of livelihood loss
	2. Poverty
	3. Food security risk
	4. Uptake of health services
	5. Education and human capital risks

Source: Author's elaboration

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[4]   For the detailed methodological framework, refer to Appendix A

Section 2:
Examining the impact of COVID-19 on various dimensions in Lao PDR

BOX 1: ECONOMIC IMPACT OF COVID-19

» Economic growth in 2020 was projected to range between negative 1.8 and 1 per cent according to World Bank estimates. The Lao National Institute for Economic Research (NIER) provided a more optimistic projection of 3.3 per cent. As of October 2020, the growth rate stood at 0.2 per cent. National growth by 2022 is expected to rebound to an average of 4.5 per cent in the low-impact scenario and 2.5 per cent in the high-impact scenario.

» The impact on the most economically relevant sectors, businesses and individuals is expected to reduce domestic revenue collection to about 3–4 per cent GDP for 2020.

» The fiscal deficit may rise from 5.1% of GDP in 2019 to between 7.5 and 8.8 per cent of GDP in 2020.

» Consequently, debt levels are expected to rise to between 6 to 9 percentage points, from 59 per cent of GDP in 2019.

Source: World Bank Group 2020

Economic situation in the country

Lao PDR has demonstrated robust economic growth and is among the fastest-growing countries in the East Asia and Pacific region, averaging over 7% growth each year for most of the past decade.[5] Economic and political reforms in Lao PDR during this period have spurred the remarkable growth. However, since 2019, the growth trajectory has been adversely affected by natural disasters and their impact on the agricultural sector. Simultaneously, government debt levels have risen. The COVID-19 crisis is placing considerable pressure on the national economy of Lao PDR (Box 1).[6]

Economic resilience in the context of COVID-19 is determined by a combination of three main factors:

1. **The extent of exposure to and reliance on sectors which depend on global value chains:** The Lao PDR economy is deeply integrated with regional and international markets, especially bilateral relations with China. High exposure to and reliance on industries such as travel, tourism and hospitality (11% of total employment and 22% of urban jobs),[7] and migrant remittances (estimated reduction of US$125 million in 2020)[8] make the Lao PDR economy exceptionally vulnerable to the impact of the measures adopted to contain the spread of the virus.

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[5]   World Bank, 'Lao People's Democratic Republic: Systemic Country Diagnostic', 2017.
[6]   Impact scenario refers to the impact of mitigation measures such as disruptions and social distancing measures that cause disruption of economic activities and human capital accumulation services; Low-impact indicates lesser disruption and high-impact refers to extensive disruption.
[7]   World Bank, 'Lao PDR Economic Monitor: Lao PDR in the time of COVID-19', 2020.
[8]   World Bank, 'Lao PDR Economic Monitor: Lao PDR in the time of COVID-19', 2020.

2. **Long-standing structural macroeconomic vulnerabilities, including fiscal deficits and high public debt levels, which will determine the nature of the national economic relief and response:** Domestic revenue continues to fall due to COVID-19, which could plunge government debt dynamics into distress. In 2012 the fiscal deficit increased to 6 per cent of GDP and government debt to GDP rose to 57 per cent. The 2016 Joint International Monetary Fund-World Bank Debt Sustainability Analysis placed the country into the category of high risk of distress. The high fiscal deficit and public debt levels, combined with low reserves, compound the urgent need for increasing government expenditure to provide support for vulnerable households to survive the socioeconomic impact of the pandemic with minimal long-term losses. As a result of high debt levels, the country also faces heightened challenges in meeting public external debt service obligations. A more recent report also indicates that the growing turbulence in global financial markets limits the Government's options for refinancing its maturing debt.[9] These economic shocks have put significant strain on the Government's budget, either limiting the economic relief it can give to citizens through social protection interventions or limiting the duration of these interventions for cost recovery reasons.

3. **The maturity of the domestic market and its ability to act as a buffer against short-term shocks emerging from global value chains:** The national employment structure is not conducive to providing the necessary domestic buffer. The sectors directly affected by COVID-19 are critical contributors to the Lao PDR economy and rely deeply on global value chains – tourism and related sectors, manufacturing (particularly garments) and migrant work.

Risk of livelihood losses

COVID-19 continues to generate gravely negative consequences for livelihoods and employment around the globe. In Lao PDR, following the end of the lockdown, there has not been a significant rebound in economic activity. Global predictions from the World Bank and others had also indicated a slower rebound from COVID-19. In Lao PDR, the unemployment rate has risen to 25 per cent from a previous rate of 2 per cent. Women and migrant workers in the country have been significantly affected.[10] In the short term, the urban poor have been hit hardest, but the impact of the crisis is expected to be felt strongly in the rural areas over time. The socioeconomic risks from COVID-19 have been significantly higher for certain households (Box 2).

BOX 2: GROUPS VULNERABLE TO LIVELIHOOD LOSSES

» Individuals working in tourism or related sectors, manufacturing (especially the garment industry), wholesale, retail, real estate and business sectors as well as agriculture are expected to be most impacted.

» Migrant and informal workers in vulnerable employment, including those in micro, small and medium enterprises (MSMEs), those without formal contracts or protection from labour laws, are at the highest risk of losing their livelihoods and also tend to remain invisible to government-provided support.

» Women are impacted due to their high levels of participation in the tourism sector, garment industry as well as informal work. Livelihood diversification has led to a marked increase in rural-urban migration, dominated by women seeking domestic work, employment in the garment industry, beer bars and karaoke bars.

Source: BBC, 2020.; World Bank 2020, UNESCO, UNDP, IOM, UN-Habitat, 2018

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[9]   World Bank, 'Lao PDR Economic Monitor: Lao PDR in the time of COVID-19', 2020.

[10]   Based on Ministry of Labour and Social Welfare (MoLSW) estimates for 2020

Using the International Labour Organization risk mapping (ILO, 2020) to categorise livelihood risks, approximately 80% of households in Lao PDR remain low-risk, while 18 per cent are considered high-risk. However, the ILO approach downplays the risk in Lao PDR as it does not consider agriculture as an at-risk industry. Overall, urban households are expected to be impacted the most by COVID-19 due to their overwhelming rate of participation in high-risk sectors. While most of the skip-generation households are in rural areas and are expected to face low levels of risk, single-parent households in urban areas are expected to face both medium and high levels of risk. With rapidly accelerating migration from Lao PDR to other parts of East Asia, children are seen to be taken care of by their grandparents engaged in rural areas – a trend also documented in other countries (Piotrowski, 2009).[11]

Figure 2: Livelihood risk composition by different family types
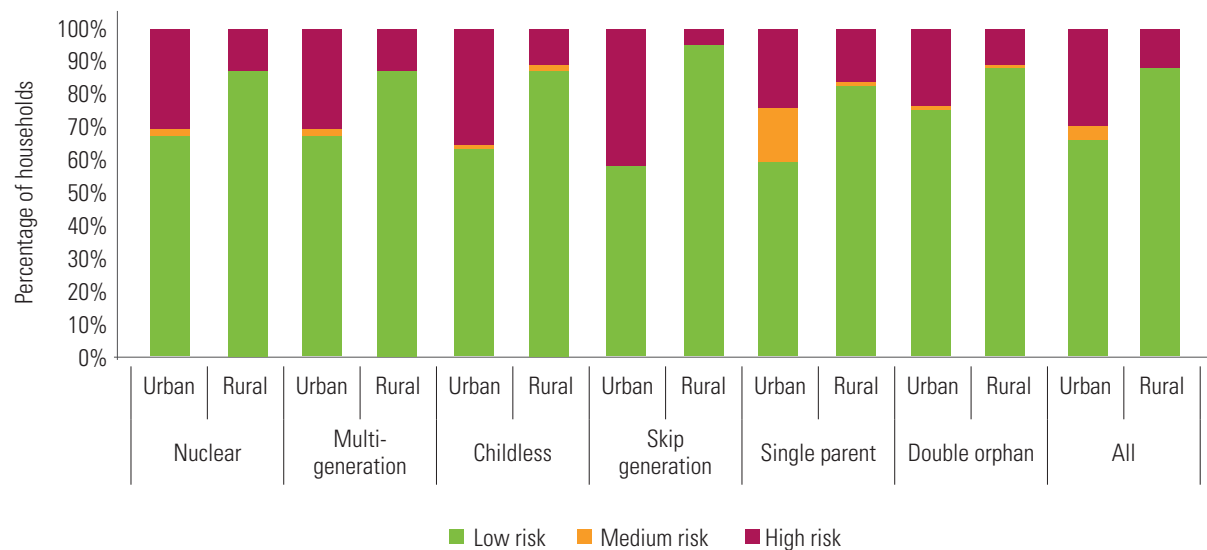
Source: Microsimulation results LSIS II

About 15% of Lao PDR's labour force (300,000) are estimated to be working in Thailand as migrant workers. Of these, more than a third have returned to Lao PDR with adverse consequences – lost employment, livelihood and incomes. The impact of more than 100,000 returned migrant workers is expected to result in an estimated loss of 0.7 per cent of GDP in remittances in 2020. At the household level, the impact of lost remittances alone is estimated to push between 96,000 (low-impact scenario) and 214,000 (high-impact scenario) persons into poverty in Lao PDR.[12] Further, many migrants working in informal settings do not have access to social security schemes[13] and are more vulnerable to falling into poverty.

The garment industry is Lao PDR's largest employer in the manufacturing sector. The industry brings substantial export revenue (30 per cent)[14], provides employment to a large proportion of the country's workforce and is one of eight priority industries in the development of the economy. While the employment figures are not as dire as those in tourism, the impact on the industry is significant. The COVID-19 crisis

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[11]   Piotrowski, M, 'Migrant Remittances and Skipped Generation Households: Investigating the Exchange Motive Using Evidence from Nang Rong, Thailand', 2009.

[12]   World Bank, 'Lao PDR Economic Monitor: Lao PDR in the time of COVID-19', 2020.

[13]   UNESCO, UNPD, IOM, UN Habitat,' Overview of Internal Migration in Lao PDR', 2018.

[14]   Food and Agricultural Organization , COVID-19 Rapid Assessment of Food Security and Agriculture in Lao PDR, 2020

places export-oriented sectors – especially those which rely extensively on imports of raw materials – such as the garment industry in Lao PDR at grave risk as mitigation measures continue to disrupt global supply chains. Due to COVID-19 the garment industry temporarily shut down, causing retrenchment of workers and high levels of non-payment or delays in salaries after consultations at the national level.[15] **The impact on the sector becomes more relevant for policymaking due to the disproportionate impact it has for women** – primarily younger women since most of the workers are women under the age of 25, typically from rural areas, who seek seasonal/temporary employment as an additional source of income.

Approximately 80% of Lao PDR's workforce is engaged in agriculture, mostly for subsistence reasons.[16] Subsistence farming is an important safety net for many households to reduce their vulnerability in times of economic crisis, where loss of income could threaten food security. Nonetheless, a rapid assessment by WFP found that COVID-19 and mitigation measures are affecting cash crops and horticulture (reduced sales), threatening availability and prices of certain commodities in provinces such as Luangnamtha and Bokeo and reducing the overall income of farmer households.[17] Moreover, the agricultural sector in Lao PDR remains critically vulnerable to extreme weather events, pest attacks and other shocks which regularly threaten farmers and their livelihoods.[18] Though the agricultural sector globally has shown resilience against the impact of the pandemic, faring better than many other sectors,[19] in Lao PDR the industry is still recovering from the devastating impact of 2019 floods and droughts and has been unable to absorb the impact of the pandemic.

The COVID-19 pandemic and its impact on the global economy has created economic disruptions for MSMEs, which form a sizeable proportion of business in Lao PDR, as evidenced by a study in six provinces which indicated that 95% of MSMEs were adversely affected.[20]

Poverty

Notwithstanding past achievements, poverty reduction and accelerating human capital accumulation is still a national priority. Economic growth has been disproportionately concentrated in urban areas. Of the of 7.1 million population in the country, 65 per cent live in rural areas[21] and experience significant challenges in communications, transport and delivery of essential services. The poverty rate in rural areas is four times higher than in urban areas and significant proportions of the population lack roads, water and electricity.[22] Even today, many households that have been lifted out of poverty live dangerously close to the poverty line, child poverty is still persistent and people remain highly susceptible to climate risks and shocks, which makes them vulnerable to falling back into poverty.

[15]   World Bank, 'Lao PDR Economic Monitor: Lao PDR in the time of COVID-19', 2020.
[16]   Food and Agricultural Organisation, 'Laos at a glance', 2020.
[17]   World Food Programme, 'Rapid Assessment of Food Security and Agriculture in Lao PDR', 2020.
[18]   Food and Agricultural Organisation, 'Laos at a glance', 2020.
[19]   World Trade Organization, 'COVID-19 and Agriculture: A story of resilience', 2020.
[20]   United Nations Sustainable Development Goals, 'UN Lao PDR Socio-economic response framework to COVID-19', 2020.
[21]   Moore, Molly, 'Share of rural population in Laos from 2009 to 2018', 2020.
[22]   Office of the United Nations High Commissioner 'UN expert calls for reform of poverty-driving policies in Lao PDR', 2019.

The Lao PDR Expenditure and Consumption Survey (LECS) of 2012/13 shows that the poverty rate is highest among the Mon-Khmer (42.3 per cent) and Hmonglu-Mien (39.8 per cent) groups. The Mon-Khmer have a poverty incidence of more than two and a half times the rate of the Lao-Tai and have experienced a relatively slower decline in poverty incidence.[23] Certain ethnic groups are more deprived than Lao-Tai at all economic levels. Inequities in terms of access to education, job opportunities, livelihood assets and the intergenerational transmission of poverty determine much of this differential.[24]

BOX 3: POVERTY PROFILE IN LAO

» Historically, there are stark differences in urban-rural poverty levels and poverty levels across ethnic groups. In addition, child poverty levels are high, poverty is gendered, with women facing marginalisation, and people with disabilities and mental illnesses among the most vulnerable,

» The World Bank estimates poverty willincrease in 2020, compared with a 0.6 percentage-point decline estimated pre-COVID-19.

» Data suggest that new poverty will be deeply concentrated among those linked to sectors experiencing strong demand shocks in the short-term and that the impact of poverty will be felt across the board due to a fall in disposable incomes and expected business closures (mainly amongSMEs).

BOX 4: STATUS OF FOOD SECURITY IN LAO

» In Lao PDR, 50% of the children and 40% of women in their reproductive ages are anaemic. Additionally, 33% of children are stunted, and about 10% of children are wasted.

» Estimates suggest a 14.3% increase in global wasting due to COVID-19. The impact on stunting remains unknown, but studies suggest that the impact will be significant as a result of the impact on poverty, food insecurity, access to health care, water and sanitation and other deprivations.

Source: (NIPN, n.d.), (Headey, D., Heidkamp, R., Osendarp, S., Ruel, M., , 2020)

The World Bank estimates that a child born in Lao PDR today will not reach his/her full development potential (that is, will be only half as productive) due to limited access to and uptake of full health and education services. About 88 per cent of children in the country experience some form of deprivation, more than 16.5 per cent are undernourished[25] and more than 33 per cent of children under the age of five experience stunting.

Development in the country differs starkly by gender. Reports suggest that girls and women face widespread marginalisation and discrimination in Lao PDR.[26] A high adolescent birth rate, high rate of child marriage and low secondary school completion rate among girls put half the young population at grave risk of not achieving their full potential in adulthood.[27]

Food security risks

The increase in livelihood risk and poverty is accompanied by the heightened risk of food insecurity. Food insecurity already affected thousands of people in Lao PDR due to a combination of droughts and floods in 2019, which severely affected the mass-consumed paddy crop. Damage to irrigation systems and sown land coupled with a rise in the price of rice was estimated to push 67,800 people to food insecurity by early 2020.[28]

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23   Lao PDR Ministry of Health, 'Indigenous Peoples Planning Framework: Ethnic Group Development Plan', 2015.
24   UNESCO, UNPD, IOM, UN Habitat,' Overview of Internal Migration in Lao PDR', 2018.
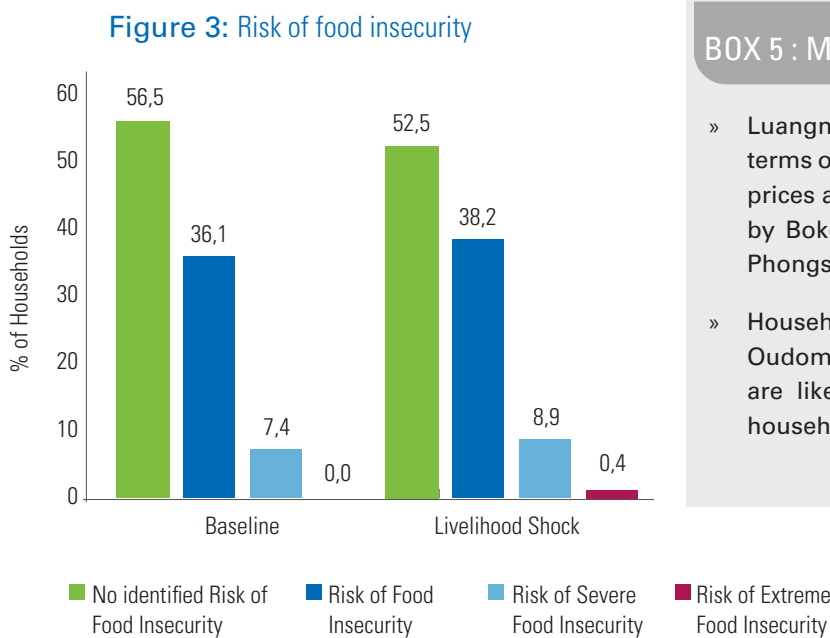25   Asian Development Bank, 'Poverty Data: Lao PDR', 2020.
26   Office of the United Nations High Commissioner, 'UN expert calls for reform of poverty-driving policies in Lao PDR', 2019.
27   United Nations Population Fund, 'Enhance Human Capital and Social Investments for Demographic Dividend in Lao PDR', 2020.
28   Food and Agriculture Organisation, 'Special report 2019 FAO/WFP Crop and Food Security Assessment Mission (CFSAM) to the Lao People's Democratic Republic', 2020.

The global social and economic crisis triggered by the COVID-19 pandemic poses further grave risks to the nutritional status and survival of young children, with a subsequent long-term impact on the growth, development and well-being of individuals, communities and the nation at large (Box 5). While mitigation measures have certainly been necessary to save lives, they have put the livelihoods of many individuals, households and population groups at risk by severely limiting income-generating opportunities. The impact on the agricultural sector also has significant effects on food security in Lao PDR, as a significant portion of the Laotian workforce is engaged in subsistence agriculture. Apart from impacts such as those emerging from climatic shocks and extreme weather events, market disruptions due to mitigation measures have threatened their livelihoods. Data also show that households with limited assets, such as land, savings, or social networks, are most at risk of experiencing extreme food insecurity.

The results of the Lao microsimulation study indicate that, overall, 47.5 per cent of households will be at risk of food insecurity (moderate, severe and extreme) due to the COVID-19 crisis as compared with 43.5 per cent at the baseline. A small share (0.4 per cent) of households could also plunge into the extreme risk category due to COVID-19.

Figure 3: Risk of food insecurity

	No identified Risk of Food Insecurity	Risk of Food Insecurity	Risk of Severe Food Insecurity	Risk of Extreme Food Insecurity
Baseline	56,5	36,1	7,4	0,0
Livelihood Shock	52,5	38,2	8,9	0,4

BOX 5 : MOST IMPACTED REGIONS IN LAO

» Luangnamtha is likely to be most affected in terms of food availability, market access, food prices and, thus, food consumption, followed by Bokeo, Savannakhet and to some extent Phongsaly and Luangphabang.

» Households from Bokeo, Luang Prabang, Oudomxai, Attapeu, Savannakhet and Sekong are likely to have the highest numbers of households facing food insecurity.

Source: Microsimulation results LSIS II

Uptake of health services

Due to the impact of COVID-19 and associated mitigation measures, there is a risk of reversing the progress made in growing the uptake of healthcare, particularly for antenatal and postnatal care, as well as for treatment of chronic diseases in Lao. The leading cause of premature deaths in Lao PDR has been respiratory infections and neonatal disorders – diseases which have been shown to have similar symptoms as the novel coronavirus.[29] The country has a low share of health care professionals, with hospitals being overstaffed and primary health centres being understaffed.[30] Scarcity of health care

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[29]   Institute for Health Metrics and Evaluation, 'Health Data: Lao PDR', 2019.
[30]   Ministry of Health (MoH), 'National Strategy on Human Resources for Health (2010–2020)', Vientiane, Government of the Lao People's Democratic Republic', 2010.

professionals can rapidly translate to resources being transferred from basic health care and care for chronic conditions towards combating the burden of the COVID-19 pandemic.

Lao PDR's response to COVID-19 has been largely met by external funding from The World Bank Group, UN agencies, Asian Development Bank and donor countries in supporting the health system and facilitating a resilient recovery. However, since funding is being reallocated towards COVID-19 preparedness and response, there is an urgent need to ensure that adequate resources are allocated to sustain regular essential health services, including care for chronic conditions such as malaria elimination, routine immunization services and measles outbreak response, HIV and AIDS and TB treatment, maternal and child health and the management of non-communicable diseases.

Lao PDR has achieved remarkable progress toward access and uptake of health care services in the last two decades and the COVID-19 crisis threatens these developments.

REDUCTION IN BASIC VACCINATION COVERAGE

The modelled estimates show a reduction in basic vaccination coverage[31] from a baseline scenario of 33.1 per cent nationally to 31.82 per cent (low-impact) down to 29.63 per cent coverage (high-impact) at a national level. Vaccination coverage and impact are asymmetrically distributed across regions, with Southern Lao having the lowest coverage and facing a reduction of just under two percentage points, while Central Lao shows the highest reduction in coverage. Interestingly, the impact is the largest for the richest households, with a five percentage point decrease to 44.4 per cent coverage. The rigidity of low-impact assumptions in the poorest quintile is due to their already low coverage rates. This shows that the severity of the impact increases by wealth and that the gap between coverage rates of richest and poorest quintiles decreases.

Table 1: Vaccination coverage by region and quintile (for children aged 12–24 months, in percentage)

	Baseline	Low-impact	Mid-impact	High-impact
North	31.73	30.6	29.57	27.55
Central	38.56	37.29	35.81	34.74
South	22.47	20.92	21.12	21.03
Poorest	18.93	18.07	17.62	17.16
Poorer	30.13	28.93	29.3	26.71
Middle	33.21	31.54	30.56	29.5
Rich	39.66	38.97	36.76	35.94
Richest	49.82	47.66	45.43	44.42
National	33.1	31.82	30.82	29.63

Source: Microsimulation results LSIS II

[31] We define full immunization coverage according to the vaccination schedule from the Lao PDR National Immunization programme. A child aged 12–23 months is categorized as being fully immunized when he/she is able to show a document of vaccination records for BCG, three doses of Polio vaccine, three doses of Pentavalent (DTP-Hib-HepB) and Measles vaccine.

REDUCTION IN INSTITUTIONAL BIRTHS AND PRESENCE OF SKILLED PROFESSIONALS AT BIRTH

The impact on institutional births and the presence of skilled professionals at birth follow similar trends – a larger impact on middle and richer households in the high-impact scenario with the share of institutional births and skilled professionals reduction for both groups being much higher than the national average. The national share of institutional births drops to between 60.5 per cent and 50 per cent depending on the impact intensity, from 64.6 per cent at the baseline. The share of births with a skilled professional present at birth is predicted to fall from 96.75 per cent in the baseline scenario to 91 per cent for (low-impact) and 75.6 per cent in the event of high-impact materializing for the richest households. **Our estimates show that COVID-19 can adversely affect the gains in institutional birth achieved by Lao PDR in the last decade.**

Table 2: Institutional birth uptake, by region and wealth quintile (in percentage)

	Baseline	Low-impact	Mid-impact	High-impact
North	63.67	59.54	55.48	50.04
Central	71.33	67.06	62.09	56.08
South	51.61	47.98	44.03	40.93
Poorest	34.19	31.79	30.2	27.1
Poor	53.65	50.01	45.55	42.54
Middle	72.38	67.76	62.84	56.82
Rich	85.45	81.09	74.39	64.47
Richer	94.92	88.56	82.57	77.13
Total	64.62	60.54	56.08	50.88

Source: Microsimulation results LSIS II

Similar results are expected for the presence of a skilled birth assistant – dropping from 64.43 per cent at the baseline to 50.58 per cent in the highimpact scenario.

Table 3: Presence of skilled birth assistant, by region and wealth quintile (in percentage)

	Baseline	Low-impact	Mid-impact	High-impact
North	63.41	60.06	55.39	50.98
Central	71.01	66.13	61.96	54.96
South	51.76	48.31	45.07	40.49
Poorest	32.97	31.16	28.42	25.45
Poor	51.26	47.9	45.36	39.92
Middle	72.24	66.98	62.84	57.77
Rich	87.44	81.98	75.59	68.92
Richer	96.75	91.07	85.09	75.59
Total	64.43	60.35	56.21	50.58

Source: Microsimulation results LSIS II

REDUCTION IN UPTAKE OF ANTENATAL CARE (ANC)

Similarly, the model predicts a risk of reversal in the progress made towards full ANC coverage from national coverage of 62.2 per cent at the baseline to 57.8 per cent (low-impact) and down to 50.2 per cent (high-impact). In line with previous results, the impact is largest in the central region dominated by urban centres and the capital Vientiane with a 12 percentage point drop in ANC coverage in this region. Impact estimates by wealth show a more than a 13 percentage point drop in ANC coverage for middle and richer quintiles compared with a less than 10 percentage point drop for poorer households. For women living in the poorest quintile households (highimpact) coverage can be expected to reduce to 25.93 per cent compared with 69.78 per cent for women from the richest households, highlighting the asymmetric nature of the socioeconomic shock.

Table 4: Impact on full ANC coverage by region and quintile (in percentage)

	Baseline	Low-impact	Mid-impact	High-impact
North	62.32	57.98	53.75	51.15
Central	66.88	62.37	58.91	54.01
South	51.91	47.77	46.26	40.38
Poorest	32.45	30.17	28	25.93
Poorer	54.23	50.58	47.22	45.5
Middle	67.92	63.61	59.04	54.72
Rich	83.25	77.17	73.69	67.88
Richest	89.65	82.85	79.5	69.78
Total	62.2	57.83	54.53	50.18

Source: Microsimulation results LSIS II

REDUCTION IN UPTAKE OF POSTNATAL CARE (PNC)

The COVID-19 pandemic is also expected to significantly affect the uptake of PNC coverage, with coverage of poor households dropping from 30.62 per cent to 28.8 per cent in the low-impact scenario and down to 27 per cent in the high-impact scenario – below the corresponding coverage for middle class households of 45 per cent (high-impact). Again, these estimates show a larger drop in the central region and for the middle and richer households living in these regions. Nationally, we can expect PNC coverage to reduce by 7 percentage points.

Table 5: PNC uptake by region and wealth quintile (in percentage)

	Baseline	Low-impact	Mid-impact	High-impact
North	40.35	37.13	35.54	33.99
Central	54.3	51.47	48.81	46.24
South	43.52	41.83	39.27	36.6
Poorest	18.76	17.63	16.79	16.54
Poor	30.62	28.76	27.27	27.05
Middle	54.46	51.73	49.16	45.26
Rich	68.71	64.8	60.77	58.34
Richer	82.71	77.71	74.36	68.43
Total	47.41	44.69	42.41	40.15

Source: Microsimulation results LSIS II

REDUCTION IN CONTRACEPTION USAGE

The COVID-19 pandemic can affect contraception prevalence to some extent as shortages of supply and reallocation of funding towards COVID-19 containment affected campaigns focusing on sexual and reproductive health. The model predicts a reduction of contraception prevalence from 54.1 per cent at the baseline to 47.1 per cent (high-impact). Although contraception prevalence in the richest households is relatively low (compared with middle quintile households), contraception usage is expected to decline among all the quintiles, with significant drops in the near-poor and middle quintile households. The decline is significant for the near-poor and upper-middle quintile households with an average reduction of under 5 percentage points from baseline to high-impact.

Table 6: Contraception prevalence by region and wealth quintile (in percentage)

	Contraception prevalence				Modern method used			
	Baseline	Low- impact	Mid- impact	High- impact	Baseline	Low-impact	Mid- impact	High- impact
North	58.1	55.42	52.86	51.16	55.8	53.38	50.89	49.31
Central	52.6	49.29	46.62	45.52	46.2	42.52	40.37	39.46
South	50.9	48.43	45.74	44.23	45.0	42.88	40.48	39.18
Poorest	43.4	41.29	39.09	37.58	41.53	39.38	37.6	36.65
Poor	53.4	50.77	47.8	46.45	49.2	47.25	44.82	43.84
Middle	57	53.72	51.74	49.91	53.33	50.39	47.58	46.08
Rich	59.9	57.03	53.87	52.54	54.49	51.58	48.88	47.86
Richest	55.3	51.75	48.95	48.07	45.36	41.59	39.78	38.28
Total	54.1	51.11	48.47	47.1	49.1	46.1	43.79	42.6

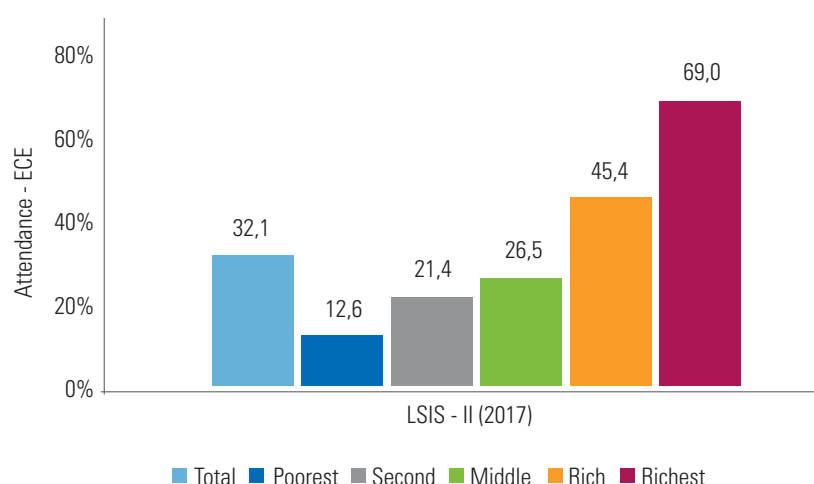Source: Microsimulation results LSIS II

Education and human capital risks

Livelihood disruptions and income fluctuations are expected to increase the rate of dropout and risk of completion of education for a greater number of children, leading to long-term development losses.

EARLY CHILDHOOD EDUCATION

Research shows that organized learning significantly improves children's school readiness and facilitate their transition into higher grades.[32] However, nearly two-thirds of children under the age of 5 in Lao PDR are not enrolled in any organised early childhood education programmes.[33] Additionally, significant socioeconomic, geographic and ethnic disparities exist in terms of ECE attendance. For instance, attendance rates for all ethnic groups are below the national average, apart from Lao-Tai. Additionally, attendance rates are the highest among urban households and children from the wealthiest quintiles (despite ECE being free). In fact, as shown in the figure below, children from the wealthiest quintiles are almost six times more likely to attend ECE compared with those from the poorest quintiles. ECE is under-realised in the country due to lack of awareness and a limited number of ECE centres.

Figure 4: ECE attendance across wealth quintiles

Source: Microsimulation results LSIS II

Since pre-primary education is free in Lao PDR and school closures due to COVID-19 were for a relatively short period, the expected impact on attendance rates has been minimal thus far. However, beyond attendance and dropout rates, these disruptions can have longer-term consequences for young children. During the 2–2.5 months of disruption, the pressure to work to mitigate income losses due to the pandemic may have forced many parents to leave their young children in unsafe and unstimulating environments at a vital point in their development. In addition, the breakage of the link between young children and their caregivers is undesired as the security and stability of these relationships are the building blocks of healthy development[34] and become especially important for children who face instability in other aspects of their

[32] Crouch & Merseth, 'Stumbling at the first step: Efficiency implications of poor performance in the foundational first five years', 2017.
[33] The low enrolment rates are mainly in the 3–4 age group; 82.7 per cent of children aged 5 were enrolled in school in 2019 as per EMIS data (2019–2020) Lao PDR Statistical Bureau, 2018.
[34] Phillips, D. A., & Shonkoff, J. P., 'From neurons to neighborhoods: The science of early childhood development', 2000.

lives.[35] There is evidence to show that the length of childcare time is positively associated with language, literacy and cognitive skills, which are impacted by disruptions.[36]

Further, the financial stress of the pandemic may make it difficult for parents to provide adequate care, nourishment and support to their children, even after early childhood education centres are reopened. The resulting lack of stability at this crucial point in a child's life can have deep and long-lasting detrimental consequences for their physical, emotional and cognitive development, as demonstrated by the financial crisis of 2008-2009.[37]

PRIMARY EDUCATION

Pre-existing pressures of poverty already push many young girls, mainly in rural areas, into early sexual debut, marriage and early pregnancy, likely to be exacerbated by the pandemic. Research shows that being out of school is also associated with a higher likelihood of child marriage.[38] Young boys are also likely to feel pressured to take on provider roles, to make up for lost household income due to COVID-19 livelihood shocks. In addition, children may be pressured to take on household chores or childcare to support households where both parents may have to take up work due to the economic losses. Fear of resurgence of the virus may push poorer parents to keep their children out of school as a cautionary measure in case of future school disruptions and redirect them to into taking up work or other roles. **The potential long-term impact of even short-term disruptions in education is corroborated by a survey in Lao PDR which showed that 86 per cent of parents believe the disruption in education had a major impact.[39]**

According to a World Bank report (2020), five months of school closures due to COVID-19 will result in an immediate **loss of 0.6 years of schooling adjusted for quality,** bringing down the effective learning that a student can achieve from 7.9 years to 7.3 years.[40] In Lao PDR, without effective remedial action, this translates to around 0.2 learning-adjusted years of schooling (LAYS) and up to 8 per cent of students between ages 6 and 18 are expected to drop out of school because of the pandemic.[41] The outcomes are particularly concerning for the most vulnerable students who "have a heightened risk of getting left behind"[42] due to fewer opportunities for learning at home. Their time out of school may present economic burdens for parents who face challenges finding prolonged childcare, or even adequate food, in the absence of school meals.[43]

35   Heather, S., & Sandra, H., 'The negative effects of instability on child Development: A Research Synthesis', 2013.
36   Loeb, S., Fuller, B., Kagan, S. L., & Carrol, B., 'Child care in poor communities: Early learning effects of type, quality, and stability', 2004.
37   Heather, S., & Sandra, H., 'The negative effects of instability on child Development: A Research Synthesis
38   Girls Not Brides, n.d, What is the impact of Child Marriage', 2013.
39   United Nations Sustainable Development Goals, 'UN Lao PDR Socio Economic Response Framework to COVID-19', 2020.
40   World Bank, 'COVID-19 Could Lead to Permanent Loss in Learning and Trillions of Dollars in Lost Earnings', 2020.
41   LAYS is the product of the quantity of schooling for the average person times the average learning during those years. For more details, see Filmer et al.
      (2018). These projections are based on simulations using the World Bank Simulation tool Azevedo, Hasan, Goldemberg, Iqbal, & Geven, 2020.
42   Global Partnership for Education, 'Lao PDR gets additional funding to mitigate the impact of COVID-19 on education', 2020.
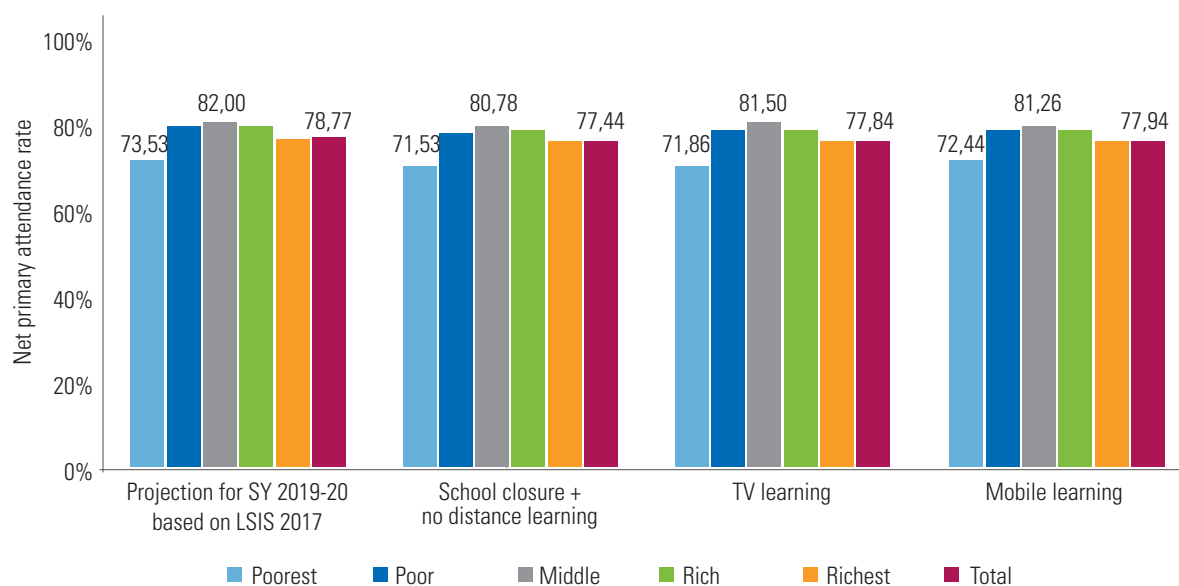43   World Bank, 'World Bank Education COVID-19 School Closures Map', 2020.

Microsimulation analysis was conducted to estimate the impact on attendance rates in primary education.[44] **The model considered only the impact of livelihood losses on attendance and did not consider the impact of prolonged school closures.** The model estimates a 1.3 percentage point reduction in net attendance rates[45] at the primary level. The assumptions made in the microsimulation estimations are in line with a UNESCO (2020) study[46] which projects a 0.17 per cent increase on average of at-risk students who might drop out of primary education in the East Asia and Pacific region.

During school disruptions, the introduction of distance learning options mitigates the impact of school closures and reduces the drop in attendance. However, it is the poorest (households in rural areas with and without roads as shown in the figure below), without access to TV, internet or smart phones, who are likely disproportionately impacted. In fact, a report in April (2020) found that students in the town of Vang Vieng, Vientiane province were adversely impacted as the village does not have electricity.[47] Further, according to historical data, ethnic differences in digital accessibility exist. Mobile phone ownership and internet access have been far lower among Mon-Khmer, Hmong-Mien, and Sino-Tibetan families compared with Lao-Tai families.

Figure 5: Primary education net attendance rates by wealth quintiles

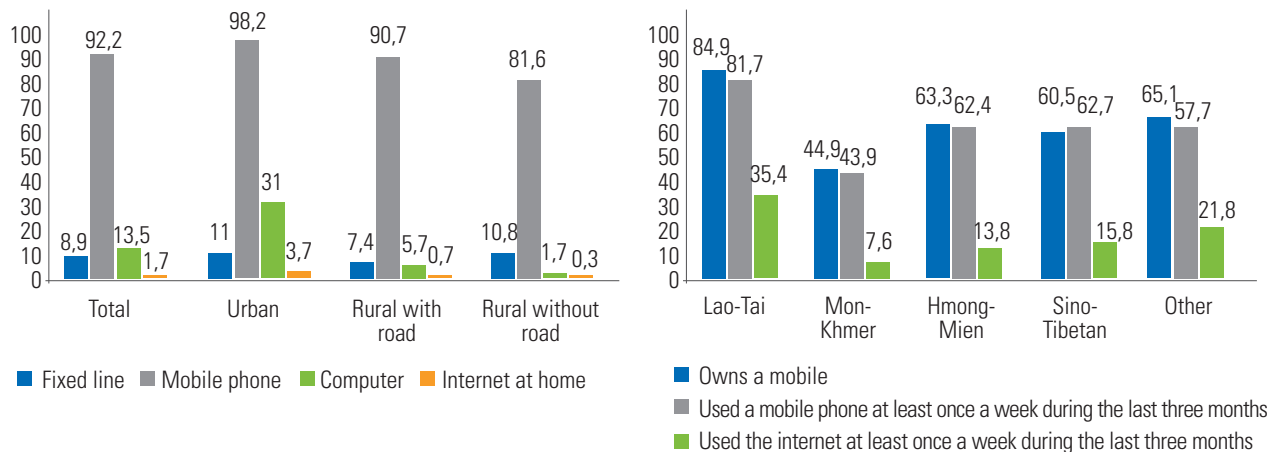

Source: Microsimulation results LSIS II

Figure 6: Household ownership of mobile phones and access to internet by area of residence (in %) and usage among females by ethnic group (in %) – LSIS II (2017)

Source: Microsimulation results LSIS II

Before the COVID-19 pandemic, specific groups of children were already at high risk of dropping out. The livelihood shocks the pandemic has brought to many households could exacerbate the situation and put these groups of children at higher risk of dropping out:

- Girls (aged 6–11) from southern provinces such as Savannakhet, Saravane and Sekong, where primary dropout rates before COVID-19 are the highest.[48, 49,50] This region also has the lowest pre-school attendance rate. High levels of school dropout rates could also possibly be attributed large distance to schools, high levels of malnutrition and inadequate parental support

- Gender stereotypes could disadvantage girls and limit their access to education as households struggle to manage finances whereas boys, often considered to be primary future breadwinners, are more likely to complete their education. According to LSIS II data, the primary completion rate is 84% for males, 83% for females.

- Caregivers' and especially mothers' (often the primary caregivers) education has a far higher impact on the likelihood of children continuing and completing their education. In households where parents'/caregivers' education levels are low, that is, primarily in rural areas and non-Lao-Tai families, there is also a higher risk of dropping out for children.

- In households where adult literacy **and** digital connectivity is low, which is especially the case in rural areas with no road access, children have a harder time in making up for lost hours in learning.

- Based on LSIS II data, poverty is one of the biggest drivers of dropout and non-completion of the primary cycle. Children from the poorest families have only a 58 per cent completion rate as compared with 98 per cent for the richest households. Thus, children from the poorest families are the most vulnerable, especially if they face overlapping factors, including disabilities, being from ethnic groups, etc.

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[48]   Lao Statistical Bureau, 'Results of the Population and Housing Census 2015', 2015.

[49]   Lao Statistical Bureau, 'Lao Socio-Economic Indicator Survey II, Survey Findings Report', 2018.

[50]   WB & ADB, 'Country Gender Assessment for Lao PDR', 2012.

SECONDARY EDUCATION

The LSIS II data show that while the net enrolment in secondary education (both lower and upper secondary) stands just over 60 per cent, only 31 per cent of adolescents complete secondary education. The transition from secondary to tertiary education is concerningly low and declining since 2013, standing at 14.97 per cent in 2018.[51] 41.8 per cent of children aged 15–17 are not in school and children in the most deprived quintile households are at far higher risk (60.9 per cent) of being out of school compared with those in the wealthiest quintile (9.6 per cent).

School closures have far-reaching economic and social effects, especially where the education system is fragile. With Lao PDR's pre-existing low levels of participation in secondary and tertiary education, the adverse effects will be more severe for disadvantaged learners and their families. More families are likely to pull their children out of school due to the higher opportunity cost of staying in secondary school compared with engaging in income-generating activities or, for some, getting married. Income shocks, disruption of education and closure of essential services and support leaves children, particularly girls increasingly vulnerable to child marriage and sexual exploitation and both boys and girls more vulnerable to child labour, as previous conflicts, disasters and epidemics have demonstrated.[52,53,54,55,56]

Microsimulation analysis was conducted to estimate the impact on attendance rates in secondary education. **The model considered only the impact of livelihood losses on attendance and did not consider the impact of prolonged school closures.** The model estimates a 1.6 percentage point reduction in net attendance rates[57] at the secondary level. The results are in line with the UNESCO (2020) study[58] which projects a 0.76 per cent (lower secondary) and 1.20 per cent (upper secondary) average increase of at-risk students who might drop out of secondary education, in the East Asia and Pacific region.

As in the case of primary education, the availability of distance learning mitigates the impact of school closures and reduces the drop in attendance. However, low access to digital infrastructure renders certain households more vulnerable to losses in learning.

[51] UNESCO Institute for Statistics, 'Lao People's Democratic Republic', 2020.
[52] Human Rights Watch, 'Covid-19 and Children's Rights', 2020.
[53] Seo, 'COVID-19 Is Pushing Girls to Marry Early and Drop Out of School: Reports' 2020.
[54] Seo, 'As COVID Shuts Schools, Girls Marry Out of Poverty', 2020.
[55] Seo, 'As COVID Shuts Schools, Girls Marry Out of Poverty', 2020.
[56] Oppenheim, 'Some girls have already married early': Young women at risk of never going back to school in Africa and Asia amid coronavirus crisis', 2020.
[57] We define Net Secondary Attendance Rate as the share of children of secondary age group (12–17 years of age) who are attending secondary education (Grade 6 to Grade 12). This is different from the LSIS 2017 estimates which define Net Adjusted Attendance Rate for lower secondary and upper secondary differently – as percentage of children of lower/upper secondary school age currently attending lower/upper secondary school or higher. Hence, our estimates are lower than the LSIS estimates. Additionally, we have used population weights to update the attendance rate from 2017–2020.
[58] UNESCO, 'How many students are at risk of not returning to school?', 2020.

Figure 7 : Secondary education net attendance rates by wealth quintiles
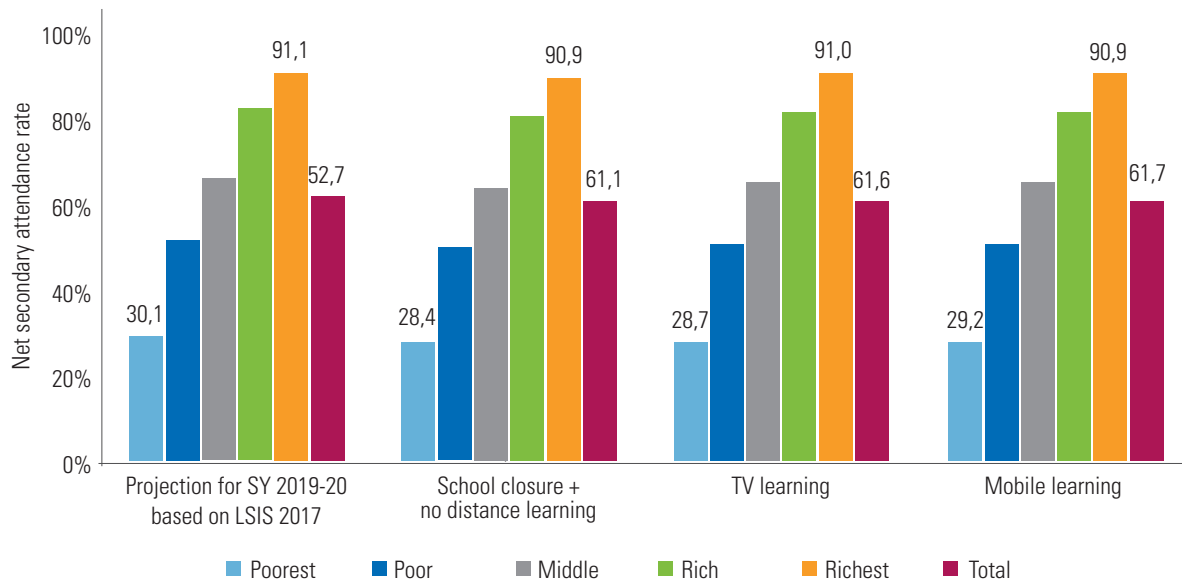
Source: Microsimulation results LSIS II

The following groups of children in this age cohort were already at risk of dropping out, which may be exacerbated by the livelihood shocks the pandemic has broughts to many households:

- Adolescents from rural areas, especially without road access.
- Non-Lao-Tai ethnic families, where net attendance has been measured below 50 per cent compared with 71 per cent among Lao-Tai ethnic groups.
- Adolescents and young adults from the poorest quintile.

Expected rise in child marriage

Early marriage, child labour and early employment are likely to surge as education faces continued and prolonged disruption, with far worse outcomes for women.

i. Keeping girls in school has been recognised as an essential pathway to tackling early marriages. The shock and uncertainty for poor and vulnerable households runs the risk of reversing decades of improvements in this regard. There

BOX 6: GROUPS AT RISK GROUPS OF CHILD MARRIAGES

» **Poverty**: girls from the poorest households are far more likely to be married early. As COVID-19 pushes families into, or deeper into, poverty, many girls are at high risk of being married early.

» **Ethnicity and traditional customs:** girls from non-Lao-Tai ethnic groups, specifically the Hmong-Iu Mien, are more likely to be married as children. Child marriage before the age of 15 is nearly 10 per cent higher in this ethnic group (18.4 per cent) than the national average (8 per cent), due to traditional practices: (i) 'Tshoob nii' – the practice of exchanging girls as young as 13 years old as payments to settle disputes – could see a significant increase amid and post-COVID-19; (ii) lack of awareness or agency among young girls who believe marriage is their only choice will continue to encourage child marriages; and (iii) traditionally accepted early sexual initiation, which leads to more unintended pregnancies and, thus, marriage.

» **Poor sexual and reproductive health (SRH) coverage:** limited SRH service delivery capacity and stigmatization of pregnant adolescents put the lives of many young girls at risk and leave them with no option other than unsafe abortions or getting married to continue their pregnancies.

» **Geography:** girls from northern uplands and Southern regions of Lao, which are poorer, have limited access to health care and education, are more likely to marry early.

are widespread concerns among UN agencies, NGOs and INGOs working in this area that girls whose education faces disruptions during the crisis might never return to school and places them at considerable risk of child marriage.[59] Organizations working on monitoring child marriages have estimated that 4 million girls are at risk of child marriage in the next two years due to the COVID-19 crisis. A UN report has predicted an additional 13 million child marriages over the next decade due to the COVID-19 crisis.[60]

ii. Families from ethnic groups, rural areas and households with mothers and caregivers with lower education levels are most likely to encourage child marriages. In these communities, caregivers often believe that girls, in particular, are ready for marriage at around age 14.[61] As child marriage is also a source of financial relief, the livelihood shock brought by the pandemic is likely to exacerbate the deterioration of family and community structures, which could reinforce the desire to control girls' sexuality[62] while reducing the pressure on limited household income by marrying girls young.

iii. There is limited empirical evidence from the COVID-19 crisis; however, experience from the Ebola crisis strongly suggests that girls and women, particularly among the poorest and socially marginalised groups, will be affected disproportionately.[63] Furthermore, consultations with stakeholders at the national level[64] revealed that child marriage or trade of child brides for money is more prevalent in northern areas bordering China.

Increased risk of child labour

The impact of a rise in poverty and extreme poverty, coupled with social norms that normalise child labour to some extent, make households far more likely to resort to child labour to cope with job losses associated with COVID-19. Approximately 15 per cent of children aged 5 to 17 years (17 per cent of girls and 13 per cent of boys) are classified as 'working children.'[65] One study found children as young as 9 years old working in brick factories in Vientiane province, while another study reported that out-of-school children commonly work more than 48 hours per week.[66] About 75.8 per cent of children aged 15–17 years engage in economic activity for less than 43 hours compared with 6.8 per cent who work more than 43 hours per week. About 57.8 per cent of children engage in less than 14 hours or economic work per week. **These proportions are likely to change – the prevalence and duration of work undertaken by children are expected to increase as a result of the impact of COVID-19.**

Child labour is marginally higher among young males – nearly 42.1 per cent of girls and 41.9 per cent of boys aged 5–17 years are involved in child labour (28.7 per cent of boys and 26.4 per cent of girls engage

59   Jordana, 'Situational Analysis on Child, Early and Forced Marriage in Vietnam, Laos, Myanmar and Cambodia', 2017.
60   Batha, 'Coronavirus could put 4 million girls at risk of child marriage', 2020.
61   Rigby, 'Young Brides in Laos face Uncertain Futures', 2013.
62   Girls Not Brides, 'Covid-19 and Child, Early and Forced Marriage', 2020.
63   Menéndez, C., Lucas, A., Munguambe, K., & Langer, 'Ebola crisis: the unequal impact on women and children's health', 2015.
64   KII and FDGs with personnel working closely with women in Lao PDR.
65   Lao Statistical Bureau, 'Lao Socio-Economic Indicator Survey II, Survey Findings Report', 2018.
66   LYU & UNFPA, 'Adolescent and Youth Situation Analysis Lao People's Democratic Republic', 2014.

in hazardous labour) according to LSIS II data.[67] Females tend to enter the labour force at an earlier age and many find employment in garment factories, restaurants, hotels and other jobs in the growing hospitality industry. While males also work in the tourism industry, many tend to find employment in jobs that are more physically demanding, such as construction, factories or farming.

Poverty is a known driver of child labour. COVID-19's associated loss of lives and livelihoods makes more families prone to poverty or extreme poverty. Using children to support income generation is likely to be one of the most immediate coping mechanisms, especially during school closures,[68] and may continue after the pandemic. Girls, in particular, are at heightened risk of having to engage in unpaid care work: domestic chores, caregiving for older persons or younger siblings.[69] Consultations with the Lao PDR Youth Union confirm these trends emerging in Lao PDR as of June 2020.

Child labour is closely linked with a lack of access to education. As the risk of dropouts increases, so does the risk of child labour or work among children. COVID-19 has disrupted education, though briefly, for many children in Lao. In instances where home-schooling cannot take place, such as among impoverished families and children without educated parents, school closures often mean that children will engage in work – paid or unpaid. This is a trend that will likely continue even after schools reopen.

Children who were already working part- time or who are at risk of child labour may never return to school. Children who were both working and studying are at risk of losing their only protection against child labour and, with losses of livelihoods due to the pandemic, may be forced to work longer hours.[70] Evidence from Malawi after the lockdown demonstrates that children are far more likely to engage in economic activities during the 'holidays'.[71]

[67] Children involved in child labour are defined as children involved in economic activities above the age-specific thresholds, children involved in household chores above the age-specific thresholds and children involved in hazardous work. See the MICS tabulation plan for more detailed information on thresholds and classifications in the LSIS II report.

[68] Hoop & Edmonds, 'Why child labour cannot be forgotten during COVID-19', 2020.

[69] CARE & IRC, 'Global Rapid Gender Analysis for COVID-19', 2020.

[70] International Labour Organization, 'Protect children from child labour, now more than ever!', 2020.

[71] ILO & UNICEF, 'COVID-19 and Child Labour: A time of crisis, a time to act', 2020.

Expected rise in child violence

Domestic violence and abuse have been on the rise since the COVID-19-related lockdown measures were put in place, globally. Similar trends have been observed in Lao.

In Lao, even before COVID-19, one in six children reported having experienced at least one form of violence before the age of 18.[72] According to the Survey on Violence Against Children in Lao PDR from 2018,[73] male (35.1 per cent) and female (34.3 per cent) children are almost equally likely to experience some kind of violence during childhood. Males are more likely to experience physical violence during childhood (16.9 per cent)[74] compared with females (15 per cent), but female children are more likely to experience violence by a parent, guardian or caregiver or another adult (11.6 per cent) compared with males (8.7 per cent). Females tend to suffer greater emotional violence and underreport sexual violence and are less likely to seek or access care (0 per cent of females received services for an incident of sexual abuse during childhood compared with 26.2 per cent of males)[75] Female children are also more likely to encounter unwanted sexual intercourse before the age of 18 years.

According to stakeholder discussions with hotline counsellors, instances of child sexual abuse have increased during the pandemic due to the associated lockdown measures. The number of reported rape cases has increased per province as have the counselling requests for girls under the age of 18 who have been sexually exploited – mainly by family members. COVID-19 exposes women, adolescents and children to violence and abuse in several ways. First, the associated economic hardships and livelihood shocks often lead to increased psychosocial morbidity, frustration and violent corporal punishment by caregivers. Second, in cases where GBV occurs, restrictions on movement mean that victims will face greater constraints in accessing protection shelters and health care services. Third, quarantine measures confine adolescent girls to spaces where they are in direct contact with perpetrators.[76] In fact, according to stakeholder discussions, most cases of sexual exploitation in girls under the age of 18, which have increased amid the pandemic, take place at the hands of a family member. These risks pose severe challenges for the Lao PDR government, development partners and civil society in enhancing gender equality.

Unfortunately, there are no mechanisms or models that can accurately estimate the extent to which these cases may increase. However, the link between economic insecurity and sharp rises in intimate partner violence, exposure of adolescent girls to sexual exploitation, harassment and other types of gender-based violence is well established from past epidemics.[77] During the Ebola outbreak, researchers declared a parallel "epidemic of rape, sexual assault and violence against women and girls."[78]

[72] National Commission for Mothers and Children, LSB, & UNICEF, 'Violence again children survey in Lao PDR: Preliminary report', 2016.
[73] National Commission for Mothers and Children, Lao Statistics Bureau and UNICEF Lao PDR, 'Violence again children survey in Lao PDR: Preliminary report', 2016.
[74] Consultations at the national level contradicted this finding and suggested that violence against young girls may be underreported and, as such, the result must be treated with caution.
[75] NCMC, LSB, & UNICEF, 'National Violence against Children Survey in Lao PDR', 2016.
[76] Fraser, 'Impact of COVID-19 Pandemic on Violence against Women and Girls', 2020.
[77] O'Donnell, Peterman & Potts, 'A gender lens on covid-19: pandemics and violence against women and children', 2020.
[78] O'Donnell, Peterman & Potts, 'A gender lens on covid-19: pandemics and violence against women and children ', 2020.

Existing challenges compounded by climate risks

Climatic risks will create compounding challenges that require conflicting policy responses.

In countries with seasonal climatic risks – floods, cyclones, storms, droughts, etc. – the pandemic poses threats of dramatic proportions. In 2018 and 2019, Lao PDR experienced widespread floods which severely affected the population and the economy. Damage losses were estimated to be around 2 per cent of GDP with immediate short-term recovery needs expenditure approaching 0.8 per cent of GDP.[79] Similar floods in 2020 would inhibit any or all of the progress made in implementing mitigation measures against not only COVID-19 but other infectious diseases. As agricultural productivity is affected, approximately half of the country's employed population – most of them poor and vulnerable – are likely to be left in precarious situations with a potential inability to earn a basic livelihood, practise social distancing, thus creating major risks of transmission and health loss.

A projection-based study in 2010[80] predicted that the Mekong region (of which Lao PDR is a part) will experience a rise in temperature of 0.01°C–0.036°C per year. The dry season between November and April is expected to become longer, along with an increased incidence of extreme weather events such as typhoons typically predicted during the rainy period between May and October. In the long term, the increase in temperature is expected to be 2°C by 2050 and 3°C by 2100 (IPCC, 2014).[81] The increase in rainfall can be assumed to lead to more instances of floods, augmenting its severity.

Flooding or drought during the lockdown period can have detrimental impacts for vulnerable families – n particular, households which rely on agriculture and diversify incomes through activities such as fishing, families that need to migrate to maintain seasonal income security and those that live in low-lying areas and are at direct risk of flooding and associated negative consequences: loss of life, livelihoods, assets; limited access to essential services; living in situations that preclude social distancing and at high risk of poor water, sanitation and hygiene (WASH) facilities. These factors cumulatively increase the likelihood of transmission of and infection from COVID-19.

In conclusion

The impact of COVID-19 and related mitigation measures threatens to reverse decades of progress made in Lao PDR. In such a scenario, social protection has been and will continue to be a crucial support mechanism to ensure long-term developmental progress while keeping sight of the Sustainable Development Goals. COVID-19 has heightened the importance of social protection systems and realised the kinds of crises for which social protection must strengthen national responses. The crisis has not only deepened existing vulnerabilities but exposed vulnerabilities among new groups in the country, such as the urban poor. Therefore, investments in comprehensive and integrated social protection systems which are designed to provide for new vulnerable groups and existing population groups who have been pushed deeper into poverty, food insecurity and who have been rendered vulnerable due to loss of livelihoods, gaps in health care and education, are extremely critical.

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[79]   International Monetary Fund Article IV Consultations, 2019.
[80]   Mekong River Commission, 'Impacts of Climate Change and Development on Mekong Flow Regime, First Assessment – 2009, MRC technical paper, MRC Vientiane', 2010.
[81]   Intergovernmental Panel on Climate Change, 'Climate Change 2014, Impacts Adaptation and Vulnerability Part B: Regional aspects', 2014, Geneva.

Appendix

A. Methodological framework

The objective of the second micro-level component is to model the impact of different levels of mitigation strategies on a range of socioeconomic and health outcomes. This section presents the methodology used to model these various indicators. The adopted approach creates a dynamic multiperiod microsimulation model at the household level to study the individual and household level effects of the global pandemic.

To measure the impact of mitigation strategies on indicators of interest, the model uses a sensitivity analysis by which different levels of impact magnitude are assessed. Since mitigation strategies can take different forms and different durations, the following scenarios are modelled for each indicator:

1. Low-impact: weak impacts of mitigation measures, such as shorter disruption and less strict lockdowns and social distancing measures that cause limited disruption for economic activities and human capital accumulation services.

2. Mid-impact: comparatively longer and more intense mitigation measures that cause more disruption for economic activities and human capital accumulation services.

3. High-impact: extremely long and far more intense mitigation measures that cause extensive disruption for economic activities and human capital accumulation services.

For any given outcome, the model therefore presents impact for three levels of impact magnitude, with low-impact causing the least disruption to regular activity and high-impact the largest disruption.

DETERMINING LIVELIHOOD RISK

To model the socioeconomic impacts of mitigation strategies, we start by assessing each household's level of exposure to a livelihood shock. The MICS, however, does not contain information on the households' economic activities nor members' employment sector. To determine a household's livelihood risk we therefore use the LECS. As a first step, we classify households according to **three risk levels: 1-Low risk, 2-Medium risk and 3-High risk.** This classification is made based on household members' occupations in their main economic activity. We make use of recent ILO projections of at-risk sectors to map each occupation to a risk level:

Table 7: Livelihood risk by economic sector

Economic sector	The current impact of the crisis on economic output
Education	Low
Human health and social work activities	Low
Public administration and defence; compulsory social security	Low
Utilities	Low
Agriculture; forestry and fishing	Low-medium
Construction	Medium
Financial and insurance activities	Medium
Mining and quarrying	Medium
Arts; entertainment and recreation and other services	Medium-high
Transport; storage and communication	Medium-high
Accommodation and food services	High
Real estate; business and administrative activities	High
Manufacturing	High
Wholesale and retail trade; repair of motor vehicles and motorcycles	High

Source: Extracted from (ILO, 2020)

Following the allocation of a risk level to each household, these risk levels are superimposed onto the MICS data. The risk levels in the socioeconomic surveys are stratified by group and the distribution of risks by each stratification is superimposed onto the same stratification in the DHS data. In a typical model, the following stratifications are created:

- Family type[82] (7 cells)
- Urban/Rural (2 cells)
- Income/Consumption quintile or decile (5 cells)

This structure leads to a total of between 6 x 2 x 6 and 10 x 2 x 10 independent agent cells, each with its distribution of risks. For instance, if 30 per cent of nuclear households in the bottom deciles and urban regions face a high risk of losing their livelihoods in the expenditure survey, the same percentage is applied to the health survey for this group. The objective is to take advantage of the data's heterogeneity to derive these relationships and better understand livelihood risk.

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[82]   At a minimum the team identifies 1) Nuclear households 2) Childless households 3) Single-parent households 4) Skip-generation households 5) Multigeneration households 6) Households with old individuals only.

Food security

Households with the highest risk of losing their livelihoods are most at risk of becoming food-insecure, especially if they do not have coping capacities. The model, therefore, assumes that households start with a baseline risk-of-food-insecurity level which is prone to increase in the event of a loss of livelihoods. Given the lack of available food security measures in the MICS survey, we use an anthropometric approach to measuring food security. Pérez-Escamilla & Segall-Corrêa (2008) suggest that although anthropometric measurements reflect food security and health status, they are reliable, highly standardized and reproducible proxies for measuring insecurity – especially at the individual level.

As such, we derived a household-based index which incorporates the level of wasting[83] for children in the household. It is critical to note at this stage that the food security analysis is limited and only representative of households with children under the age of 5. Based on the individual nutrition information, a household can fall into any of the following categories at the baseline:

- **No risk of food insecurity:** If no child is mildly wasted in the household and no child is underweight in the household.
- **Risk of food insecurity:** If a child is mildly wasted[84] in the household or a child is moderately underweight.
- **Risk of severe food insecurity:** If a child is moderately wasted in the household and a child is moderately underweight.

To model the impact of a livelihood risk, we cross-reference this index with the livelihood risk index. Households with medium or low livelihood risk are assumed to move to a higher level of food insecurity risk. In contrast, those with low livelihood risk remain in the same category they were in at the baseline. Households with risk of food insecurity and with high livelihood risk move to the fourth category of Extreme risk of food insecurity. The MICS data usually show that wasting and ownership of agricultural land are inversely correlated, indicating that land ownership is likely a good proxy for coping. Land-owning households are less prone to food shocks. Therefore, households owning land are assumed to remain at their baseline level of food insecurity risk.

Education and human capital

Conventional lockdown strategies have shown to significantly affect the accumulation of human capital since children are forced to stay at home without access to remote learning. We measure the impact of mitigation strategies on the number of school days lost as a direct impact. Still, we emphasised long-term capital accumulation impacts as children face a high risk of not returning to school post-lockdown.

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[83]   The team will further assess whether to use prevalence of underweight as the main anthropometric measurement driving this model, as it might respond more quickly to a food security shock.

[84]   Mild wasting is defined as having a wasting z-score < -1SD based on World Health Organization criteria, Del Rossi, Kamenwa, Akech, & Macharia, 2018.

We also look at the inequality of outcomes brought on by distance learning measures and their impact on attendance rates.

To estimate the impact of the lockdown on future attendance rates, we start by deriving baseline attendance. Cross-tabulations and correlations suggest that households with agricultural land and those in higher wealth quintiles are more likely to be enrolled. We assume, therefore, that the risk of dropout for these households is lower. To model the impact, we then assigned each household a level of risk of school dropout, depending on their livelihood risk level. Those with higher risk are more likely to see their children drop out because of limited ability to pay for school expenses or because children are forced to work to contribute to the family income. The following matrix displays the risk of dropout by household category and by livelihood risk for primary education:

Table 8: Dropout risk for primary education by category, no distance learning (in percentage)

Livelihood risk	Q5 Land	Q5 No land	Q4 Land	Q4 No land	Q3 Land	Q3 No land	Q2 Land	Q2 No land	Q1 Land	Q1 No land
Low	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25
Medium	0.25	0.75	1.25	1.75	2.25	2.75	3.25	3.75	4.25	4.75
High	0.5	1.25	2	2.75	3.5	4.25	5	5.75	6.5	7.25

Source: Microsimulation results LSIS II

Table 9: Dropout risk for secondary education by category, no distance learning (in percentage)

Livelihood risk	Q5 Land	Q5 No land	Q4 Land	Q4 No land	Q3 Land	Q3 No land	Q2 Land	Q2 No land	Q1 Land	Q1 No land
Low	0	0.5	1	1.5	2	2.5	3	3.5	4	4.5
Medium	0.5	1.5	2.5	3.5	4.5	5.5	6.5	7.5	8.5	9.5
High	1	2.5	4	5.5	7	8.5	10	11.5	13	14.5

Source: Microsimulation results LSIS II

In the second scenario, we modelled dropouts when distance learning measures are established. Distance learning can be in the form of Government-run educational programmes on television, or educational services on mobile phone platforms. We assume that the risk of dropout decreases by 50% when distance learning mechanisms effectively reach households. The risk levels for each category therefore decline to the following:

Table 10: Dropout risk for primary education by category, with distance learning (in percentage)

Livelihood risk	Q5 Land	Q5 No land	Q4 Land	Q4 No land	Q3 Land	Q3 No land	Q2 Land	Q2 No land	Q1 Land	Q1 No land
Low	0	0.13	0.25	0.38	0.5	0.63	0.75	0.88	1	1.13
Medium	0.13	0.38	0.63	0.88	1.13	1.38	1.63	1.88	2.13	2.38
High	0.25	0.63	1	1.38	1.75	2.13	2.5	2.88	3.25	3.63

Source: Microsimulation results LSIS II

Table 11: Dropout risk for secondary education by category, with distance learning (in percentage)

Livelihood risk	Q5 Land	Q5 No land	Q4 Land	Q4 No land	Q3 Land	Q3 No land	Q2 Land	Q2 No land	Q1 Land	Q1 No land
Low	0	0.25	0.5	0.75	1	1.25	1.5	1.75	2	2.25
Medium	0.25	0.75	1.25	1.75	2.25	2.75	3.25	3.75	4.25	4.75
High	0.5	1.25	2	2.75	3.5	4.25	5	5.75	6.5	7.25

Source: Microsimulation results LSIS II

The objective of this modelling exercise will be to show how mitigation (lockdown) measures can cause a drop in attendance levels across all wealth quintiles. The reduction in attendance can be mitigated by the establishment of proper distance learning strategies. These strategies might include education programmes on television, digital learning (with online and offline access), take-home printed materials and other strategies which are sensitive to the context and policy domain. For instance, in an area with poorer households, lack of access to assets such as televisions, computers, tablets, reliable broadband or electricity, online measures would be ineffective. There, the model would be expected to show that distance learning measures can be equity-reducing. The outcome would be evidenced by the larger gap in attendance rates between the bottom and top quintiles. Therefore, in such contexts, take-home printed materials would be much more effective. However, our model does not take into account offline policy interventions.

The dropout assumptions were based on a global review undertaken by (UNESCO, 2020) wherein they project that 10.9 million children at primary and secondary levels will be at a heightened risk of not returning to school in 2020 following school closures due to COVID-19. Their study includes 180 countries and territories (including Lao PDR). The following table highlights their projection results for the East Asia and Pacific region. Dropout estimates for primary education are, on average, lower than secondary education. This is due to the higher financial burden combined with a household's coping strategies such as engaging household members in livelihood-based activities rather than schooling (UNESCO, 2020).

Table 12: UNESCO Estimates on dropout rates due to COVID-19-induced school closures for the East Asia and Pacific region

	# at risk students ('000 students)	% increase of at-risk students
Pre-primary	801	1.18%
Primary	326	0.17%
Lower secondary	669	0.76%
Upper secondary	863	1.20%
Tertiary	1841	2.51%
Grand total	4499	0.92%

Source: (UNESCO, 2020)

Uptake of health services

We are interested in measuring the impact of the COVID-19 crisis on the uptake of basic maternal and child health services. Using the MICS data, we focus on the following list of outcomes for our analysis:

1. Contraceptive prevalence rate (Family planning)
2. Percentage of women using modern methods of contraception (Family planning)
3. Percentage of children 12–23 months with completed basic vaccination (Vaccination)
4. Percentage of women completing 4+ ANC visits in their last pregnancy (Antenatal care)
5. Percentage of women with a postnatal check (Postnatal care)
6. Percentage of births delivered by a skilled attendant (Childbirth care)
7. Percentage of births delivered in a health facility (Childbirth care)

The modelling of health service coverage is based on the methodology adopted by Robertson et al. (2020),[85] which expresses reductions in coverage for different categories of care as a function of workforce reduction, supplies reduction, demand reduction and access reduction. Specifically, any health indicator's reduction coverage is expressed as the following:

Health Service Coverage reduction
=1-(1-Workforce reduction)*(1-Supplies reduction)
(1-Demand reduction)(1-Access reduction)

Given the uncertain nature of the evolution of the pandemic, we adopt three different scenarios to measure reductions of coverage under various magnitudes of impact. The following matrices summarize the impact reductions adapted for the first scenario:

Table 13: Reduction by parameter, low-impact scenario

Low-impact	Workforce	Supplies	Demand	Access
Family planning	None	Small	None	Small
Childbirth care	Small	Small	None	Small
Antenatal Care	Small	Small	Small	Small
PNC	Small	Small	Small	Small
Vaccination	Small	Small	Small	Small

Source: Microsimulation results LSIS II

Robertson et al., 'Early estimates of the indirect effects of the COVID-19 pandemic on maternal and child mortality in low-income and middle-income countries: a modelling study', 2020

The second scenario:

Table 14: Reduction by parameter, medium-impact scenario

Mid-impact	Workforce	Supplies	Demand	Access
Family planning	Small	Moderate	None	Small
Childbirth care	Moderate	Moderate	None	Small
Antenatal Care	Moderate	Moderate	Small	Small
PNC	Moderate	Moderate	Small	Small
Vaccination	Moderate	Moderate	Small	Small

Source: Microsimulation results LSIS II

And the final scenario:

Table 15: Reduction by parameter, high-impact scenario

High-impact	Workforce	Supplies	Demand	Access
Family planning	Moderate	Moderate	None	Large
Childbirth care	Large	Moderate	None	Large
Antenatal Care	Large	Moderate	Small	Large
PNC	Large	Moderate	Small	Large
Vaccination	Large	Moderate	Small	Large

Source: Microsimulation results LSIS II

In the above matrices, a small reduction is equivalent to 5 per cent, a moderate reduction to 10 per cent and a large reduction to 25 per cent. However, demand and access are dependent on households' livelihoods, which have different risk levels (based on ILO projections of at-risk sectors to map each occupation to a risk level). Therefore, we further adapt the demand and access components of the model to vary with livelihood risk, where households are assigned risk levels 1 (low) to 3 (high).

Table 16: Demand and access reduction by livelihood risk level

	Livelihood risk level 1	Livelihood risk level 2	Livelihood risk level 3
None	0%	0%	0%
Small	0%	5%	10%
Medium	5%	10%	15%
Large	20%	25%	30%

Source: Microsimulation results LSIS II

Using the above matrices and all corresponding risk levels, we calculate the anticipated drop in coverage based on the livelihood risk level in each scenario:

Table 17: Expected coverage drops by livelihood risk level and indicator

	Low-impact scenario			Medium-impact scenario			High-impact scenario		
	Level 1 Households	Level 2 Households	Level 3 Households	Level 1 Households	Level 2 Households	Level 3 Households	Level 1 Households	Level 2 Households	Level 3 Households
Family Planning	5.0%	5.0%	5.0%	14.5%	14.5%	14.5%	19.0%	19.0%	19.0%
Childbirth care	9.8%	9.8%	9.8%	19.0%	19.0%	19.0%	32.5%	32.5%	32.5%
Antenatal care	9.8%	14.0%	17.9%	19.0%	22.8%	26.3%	32.5%	35.0%	37.2%
PNC	9.8%	14.0%	17.9%	19.0%	22.8%	26.3%	32.5%	35.0%	37.2%
Vaccination	9.8%	14.0%	17.9%	19.0%	22.8%	26.3%	32.5%	35.0%	37.2%

Source: Microsimulation results LSIS II

Based on the above, we calculate the precise percentage point reduction for each of our seven uptake indicators and randomly flag cases in the microdata to become non-receivers in each scenario.