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Strengthening the Linkages Between Social Registries and Climate Risk Data in Asia and the Pacific

TETRA TECH

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ACRONYMS

ADPC	Asian Disaster Preparedness Center
API	Application Programming Interface
CCD	Climate Change Department
CCT	Conditional Cash Transfer
CLEAR	Consolidated Livelihood Exercise for Analyzing Resilience
CO2	Carbon Dioxide
CVA	Climate Vulnerability Analysis
DMC	Disaster Management Center
DMD	Disaster Management Division
DRM	Disaster Risk Management
DSWD	Department of Social Welfare and Development
EM-DAT	Emergency Events Database
FAO	Food and Agriculture Organization
GCM	Global Climate Models
GDP	Gross Domestic Product
HAF	Household Assessment Form
IWMS	Integrated Welfare Benefits Management System
KII	Key Informant Interview
Lao PDR	Lao People's Democratic Republic
LSSO	Lao Social Security Organization
MAF	Ministry of Agriculture and Forestry
MNCH	Maternal, Newborn, and Child Health
MoLSW	Ministry of Labor and Social Welfare
MoNRE	Ministry of Natural Resources and Environment
NBRO	National Building Research Organization
NDC	Nationally Determined Contributions
NDRSC	National Disaster Relief Service Center
NHI	National Health Insurance
NHIB	National Health Insurance Bureau
NSMP	National School Meal Programme
NSPS	National Social Protection Strategy (Lao PDR)
WBB	Welfare Benefits Board
WFP	World Food Programme

Contents

Executive Summary

The Asia Pacific region is one of the regions most affected by climate change. In 2022 alone, extreme weather events affected over 64 million people in Asia and the Pacific and caused economic damage estimated at US$57 billion.[1] Asia-Pacific countries experienced, on average, six natural disasters a year over the past three decades – about twice as many as developing countries in Latin America and the Caribbean region and about three times as many as in sub-Saharan Africa.[2] The effects of climate shocks can have longer-term negative impacts on incomes and asset accumulation.[3] Due to the increasing frequency and severity of disasters that disproportionately impact vulnerable communities, additional assistance and planning are needed to help households face increasing climate shocks.

Despite these shocks, the Asia Pacific region has been heralded as the globe's leading success story for alleviating poverty for many decades. However, recent reports reveal that poverty is potentially on the rise again in the region. With millions more people living just above the national poverty line, the risk of falling back into poverty if faced with a climate shock or other crisis is high. If the trends continue, it is estimated that more than 260 million people in the Asia-Pacific region could be pushed into poverty due to climate-related disasters in the next decade, unless governments step up robust social protection schemes.[4] Many countries in the Asia Pacific region have low social protection coverage, leaving the vast majority of the most vulnerable populations on the front line of climate crises unprotected.[5] With many vulnerable people in the region, countries and large international organisations like the World Food Programme list building robust and adaptive social protection as one of their top priorities.

Social protection plays a crucial role in supporting climate change adaptation and mitigation by providing vulnerable populations with financial assistance, resources, and resilience-building measures to cope with climate-related shocks and stresses. However, these systems sometimes face challenges regarding coverage, comprehensiveness, adequacy, and quality of programmes, particularly when responding to climate shocks. To effectively address the impact of climate shocks on households, climate-sensitive criteria must be integrated with the frameworks of social protection information systems and social registries, ensuring they can respond promptly and effectively to climate-related shocks to prevent disasters. This includes diversifying assets and livelihoods, supporting households' ability to cope with crises, and developing resilient community assets to address community vulnerabilities. Predictable transfers from adaptive social protection programmes help minimise harmful coping mechanisms.[6]

This report outlines the findings and best practices for integrating climate risk data with social registries, focusing on two case study countries, Sri Lanka and the Lao People's Democratic Republic (Lao PDR). Pulling from regional initiatives as well as lessons learned from the case study countries, the report further recommends ways institutions can strengthen social protection systems to be more adaptive and responsive to climate shocks. Ultimately, the study shows that the inclusion of climate risk analysis is not limited to registries alone but can extend to other types of social protection information systems.

1 UNDP (2024). Making our Future: New Directions for Human Development in Asia and the Pacific
2 UNDP (2024)
3 Caruso, G.D. (2017). The legacy of natural disasters: The intergenerational impact of 100 years of disasters in Latin America
4 UNESCAP (2024) Protecting our Future Today: Social Protection in Asia and the Pacific. Social Outlook for Asia and the Pacific
5 UNESCAP (2024)
6 Bowen, Thomas, del Ninno, et al. (2020) Adaptive Social Protection: Building Resilience to Shocks. International Development in Focus

CASE STUDY OVERVIEW & FINDINGS

Lao PDR faces significant climate-related hazards, including floods, droughts, and heatwaves. The social protection system has advanced, with initiatives like the National Social Protection Strategy (NSPS) aiming for universal access to social protection services. However, the integration of climate risk data into social registries remains limited. The social registry, managed by the Ministry of Agriculture and Forestry (MAF), is working to add climate exposure and vulnerability indicators. Efforts are underway to improve the registry's coverage and accuracy and integrate climate risk information to better target and deliver social protection programmes.

Sri Lanka has a long-established national social protection system with over 25 social assistance programmes providing support during times of hardship.[7] Recently, the Aswesuma Welfare Benefit Payment Scheme was introduced to replace the Samurdhi cash transfer programme, and the deprivation-based scoring system was adopted to better target benefits, supported by the World Bank. The Aswesuma Welfare Benefit Payment Scheme provides monthly cash benefits to vulnerable individuals and families, with government approval currently in place for a three-year period. However, the integration of climate risk data into social protection programming is limited. The Welfare Benefits Board (WBB) manages the Integrated Welfare Benefits Management System (IWMS), which could incorporate climate risk data to better target beneficiaries.

KEY RECOMMENDATIONS

Strengthening and institutionalising linkages between social registries and climate risk data in Asia and the Pacific regions requires tailoring social protection approaches to the government's needs. There are several strategic entry points through which links between climate risk data and social protection could be built into existing systems. Non-contributory social protection programmes are particularly important in this context, as they target vulnerable low-income households, who are also usually the most vulnerable to climate disasters. This report identifies five key areas of focus to improve the coordination of social registries with climate risk data in order to support more shock-responsive and adaptive social protection systems.

1. Invest in robust climate hazard and exposure analysis for geographic targeting

Carry out a climate hazard analysis to consolidate disaster risk management and climate data into a comprehensive national climate hazard map. Integrate this map with social registry data to identify specific areas where low-income households face heightened vulnerabilities to climate risk. By focusing on these high-risk regions, support can be prioritised for the communities most affected by climate change. Further, integrating detailed household-level data regarding climate hazards, exposure levels, and specific vulnerabilities will enable a more granular and effective targeting at the household level.

7 Colombo Urban Lab & Feminist Collective (2024). Targeted Social Protection During Unprecedented Economic Crisis: Case of Sri Lanka

2. **Improve the integration of climate vulnerability indicators into social registries**

Develop a more comprehensive approach to measure vulnerability by incorporating climate-related indicators into the Proxy Means Test (PMT) to more accurately target populations at risk of climatic shocks. Potential indicators could include physical exposure to climate-related hazards, engagement in climate-vulnerable livelihoods (e.g., fishing, herding, or agricultural labour), and the adaptive capacities of households. In addition, to keep pace with the dynamic nature of climate change and its impacts on vulnerable populations, it is necessary to regularly update this data. Methods could involve on-demand data collection approaches or conducting periodic census surveys every two to three years.[8]

3. **Identify and register "non-poor" households vulnerable to climate-related risks**

Expand the coverage of social registries to include "non-poor" households that might require temporary assistance due to severe shocks. Given the associated high costs of this process, start by prioritising areas most vulnerable to climate shocks when planning any expansion of existing social registry coverage. In addition, consider creating a climate vulnerability score to categorise households into high, moderate, and minimal risk to facilitate targeted support for climate-vulnerable households, including those not currently benefiting from social protection programmes.

4. **Progressively build a climate risk index at the household level.**

Developing a comprehensive climate risk index that integrates various hazards, exposure levels, and household vulnerabilities is essential for detailed risk mapping and prioritising support. Such risk maps can facilitate well-defined and targeted shock-responsive programming.

5. **Enhance government capacities to improve the interoperability and data sharing between social protection, disaster risk management and climate information systems.**

Strengthen the capacities of the ministries responsible for social protection, disaster risk management, and climate action to facilitate interoperability and data sharing between their information systems. Efforts should include establishing common identifiers to support system interoperability and cross-checks; defining protocols for data sharing, access, and use by various actors; and establishing inter-institutional arrangements for the governance and management of these systems and their integrated utilisation.[9]

6. **Strengthen multisectoral coordination for adaptive and shock-responsive social protection.**

The recommendations outlined above will be facilitated by enhanced coordination between the core sectors of social protection, disaster risk management and those involved in climate action. This involves clearly defining the role of social protection within disaster risk management and climate change adaptation and mitigation frameworks, as well as the development of institutional guidelines for adaptive and shock-responsive social protection. Additionally, establishing a national social protection and climate task force could bridge coordination gaps and advocate for improved policies and social protection guidelines that foster greater intra-ministerial coordination.

8 Barca and O'Brien (2017). Factors affecting the usefulness of existing social protection databases in disaster preparedness and response

9 World Bank (2020). Making social protection information systems adaptive

1. Introduction

1.1. Background

The Asia Pacific region is home to about 60 percent of the globe's population, accounting for 4.7 billion people in 2022.[1] The region is also the most disaster-prone in the world, leaving a significant portion of the population exposed and vulnerable to the impacts of extreme weather and climate events.[2] In fact, people in the Asia Pacific region are six times more likely to experience climate and other weather-related hazards than those outside the region.[3] The impact of these climate-related hazards is staggering. From 1970 to 2021, a total of 5,105 disasters attributed to weather, climate, and water extremes were recorded throughout Asia and the Pacific.[4] They caused more than 1,051,214 fatalities and US$1.58 trillion in economic losses.

The future looks even more daunting, with climate change expected to raise these numbers. The Intergovernmental Panel on Climate Change (IPCC) Asia-Pacific Regional Assessment asserts that the region is poised to undergo several discernible changes, including elevated average temperatures, increased incidence of heat waves, increased occurrence of extreme rainfall events, a rise in sea levels, and intensified storms (although the overall frequency of storms remains uncertain).[5] Experts widely agree that heavy rainfall events will intensify in Lao PDR and Sri Lanka. These shocks and impacts from long-term climate change trends will profoundly impact vulnerable communities, especially those living in poverty, who suffer disproportionately from climate-related events.[6] An estimate from the World Bank notes that climate change could push 35.7 million people into extreme poverty by 2030 in Asia and the Pacific.[7] Due to the increasing frequency and severity of disasters that disproportionately impact vulnerable communities, additional assistance and planning are needed to help households face increasing climate shocks.

Countries in the Asia-Pacific region are rapidly adapting their social assistance programmes to keep up with the increasing climate risks by linking social protection systems more intentionally with climate change through new policies and practices. In this way, social protection systems have seen increased use and success in addressing climate-related challenges by providing a safety net for vulnerable populations. These systems can include measures such as cash transfers, public works programmes, and social insurance schemes that help individuals and communities cope with the immediate impacts of climate events like floods, droughts, and storms. By ensuring that people have access to basic needs such as food, water, shelter, and healthcare before, during, and after climate disasters, social protection systems reduce the risk of poverty and social instability.[8]

However, challenges still persist when attempting to create climate-informed social protection initiatives. One major challenge is the lack of integration between climate policies and social protection programmes and subsequent institutional silos that lead to fragmented efforts and inefficiencies.[9] Funding constraints may also limit the government's ability to scale up social

1 UNESCAP (2024)
2 UNESCAP (2023). Siezing the moment. Targeting Transformative Disaster Risk Resilience
3 UNWMO (2024). State of the Climate in Asia.
4 UNWMO (2023). Economic Costs of Weather-Related Disasters Soars but Early Warnings Save Lives.
5 Shaw, R., Y. Luo, T.S. Cheong, S. et. Al (2022). Climate Change in Asia: Impacts, Adaptation and Vulnerability.
6 Sengupta & Dahlet (2023). Policy coherence between social protection and climate action: Initial findings from global studies and projects.
7 ILO (2024). World social protection report 2024-26: Regional companion report for Asia and the Pacific
8 ILO (2024).
9 Costella, Shabahat, et. al. (2024). Social protection and jobs for climate change challenges: current practice and future opportunities

protection measures that are climate and shock-responsive.[10] Additionally, data gaps in climate-exposed areas, socioeconomic vulnerabilities, and demographics can hinder both the design and proper targeting of interventions.[11] Combined with political and administrative challenges, aligning these two paradigms requires significant coordination and commitment on behalf of diverse stakeholders and policymakers, yet addressing these limitations is crucial for creating adaptive and shock-responsive social protection systems.

Investing in enhanced social protection information systems that incorporate climate data is essential for accurately identifying populations with higher vulnerability towards climate impacts and ensuring targeted and effective support reaches those most at risk. One way to achieve this would be to improve the data quality of the social registry. By preemptively addressing challenges such as limited coverage, outdated data from static intake processes, and issues with interoperability, improving social registries could directly impact the effectiveness of social protection programmes' ability to be adaptive and aid in shock response. The integration of climate vulnerability data with social protection information will help decision-makers identify and support populations vulnerable to climate-related shocks more efficiently at national, subnational, and community levels. Social protection plays a crucial role in supporting climate change adaptation and mitigation by providing vulnerable populations with financial assistance, resources, and resilience-building measures to cope with climate-related shocks and stresses.

1.2. Overview and Purpose

The World Food Programme (WFP) supports national actors in improving the delivery of shock-responsive social protection programmes while enhancing overall efficiencies and effectiveness.[12] They have supported governments in incorporating multi-hazard criteria into national social protection frameworks to align eligibility more effectively with the diverse risks posed by climate change, as well as supported the deployment of multidimensional targeting criteria for beneficiary selection to help ensure that support reaches those most vulnerable to the compounded impacts of climate-related economic shocks and stresses.

To this end, the WFP Regional Bureau in Bangkok, in partnership with the WFP Country Offices in Sri Lanka and Lao and in consultation with the governments of the Democratic Socialist Republic of Sri Lanka and Lao People's Democratic Republic (Lao PDR), commissioned Tetra Tech to conduct the "Strengthening the Linkages Between Social Registries and Climate Risk Data in Asia and the Pacific" study. The study aims to provide comprehensive evidence and recommendations to guide WFP and government partners in integrating social registries with climate analytics and hazard mapping. By doing so, the study seeks to deepen government and stakeholder understanding of how the interlinkages across climate, weather, and socio-economic data, and the geographic distribution of shocks can be mapped against available socio-economic and social protection programme information to inform disaster preparedness and response. Additionally, the study aims to strengthen government and development partners' capacity to improve eligibility, targeting, and registration determination of national social protection programming.

10 Costella, Banthiya, et. al. (2024). Mapping the integration of climate considerations in social protection in LMICs: An assessment of ninety-eight climate-relevant social protection programmes

11 Barriga-Cabanillas, Bossuroy, et. al (2024). Sustaining Poverty Gains a Vulnerability Map to Guide the Expansion of Social Registries.

12 WFP (2021). World Food Programme Strategy for Support to Social Protection.

Focusing on Sri Lanka's Aswesuma programme and Lao PDR's Helping Hands Programme, the study's recommendations are tailored to improve social registries for more effective, adaptive and shock-responsive social protection programmes. The subsequent analysis focuses on four key components: climate risk and socioeconomic vulnerability, evaluating the overlap between climate risk and current social registry (likely) beneficiaries, and providing recommendations for integrating social registries and climate risk information.

1.3. Scope of the Study

Social protection systems encompass a range of instruments, including social assistance, social insurance, and labour market policies. In this study, the focus is on social assistance programmes, which are non-contributory programmes providing financial or in-kind benefits such as cash transfers, food assistance, and essential services (housing, health, education). Social assistance programmes are designed to ensure that the basic needs of the most vulnerable populations are met, making them well-suited to identify vulnerable individuals. With the right risk-informed analytics and integration, those most likely to bear the brunt of shocks can be potentially better identified and supported through these programmes.

A key operational component of social assistance programmes, such as Sri Lanka's Aswesuma scheme and Lao PDR's Helping Hands programme, is the use of social registries, which are systems that facilitate outreach, intake, registration, and eligibility determination for multiple social protection programmes.[13] They centralise data collection by compiling information on potential beneficiaries who are then targeted by specific programmes and services based on eligibility criteria. Social registries also help assess the need for social programmes by profiling the needs and conditions of different population groups. While the primary focus of the study is to examine how governments can better integrate climate information into social registries, as exemplified in the case study countries of Sri Lanka and Laos PDR, ultimately, the study argues that the inclusion of climate risk analysis is not limited to registries alone but can extend to other types of social protection information systems (Figure 1).

1.4. Study Methodology

The study team followed a mixed-method approach using quantitative and qualitative data sources to build a comprehensive evidence base. Tetra Tech delved into government and development partner-focused programming and data related to food security, climate risk management, and social protection, utilising key informant interviews and workshops, as outlined below.

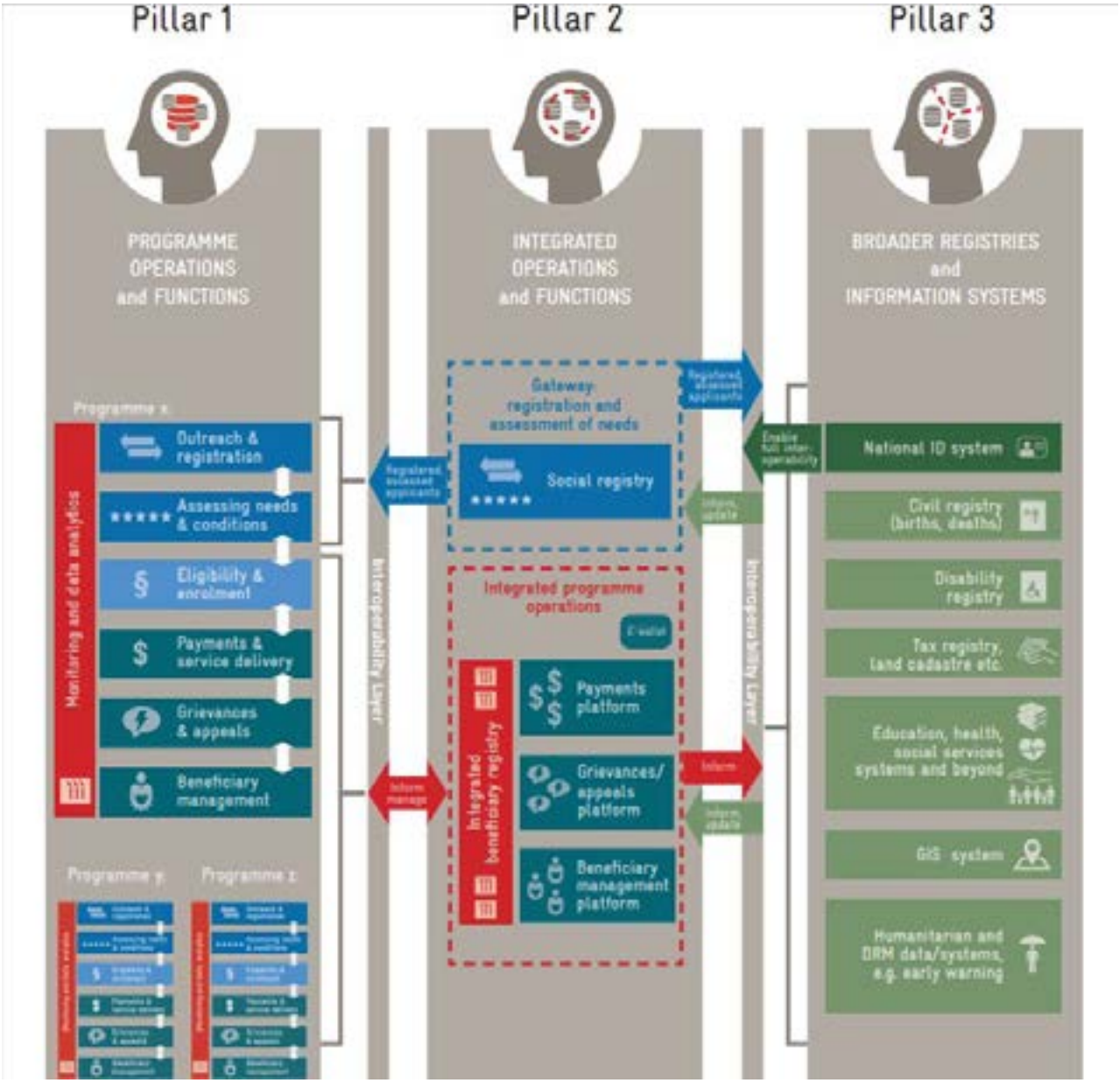
1.4.1. QUALITATIVE ANALYSIS

The study examined social protection systems in the case study countries, focusing on institutional arrangements, programmes, and data and information systems. Given the research objective, particular attention was given to analysing the current state of social registries and climate risk data, as well as the challenges and opportunities to strengthen the linkages between them.

To understand the social protection and registry landscape, Tetra Tech comprehensively reviewed existing documents, including relevant national strategies, policies, and technical studies. The primary data collection method involved in-

13 WFP (2024). Social Protection Systems in Asia and the Pacific.

Figure 1: Three pillars of social protection information systems



Source: GIZ (2020). Social Protection Information Systems.

person interviews with government partners, key informants at WFP Country Offices (Sri Lanka and Lao PDR), and development practitioners. The interviews followed a consistent structure tailored to each specific respondent. Additionally, the team held technical consultation workshops with government officials and relevant stakeholders to understand the social protection and disaster risk management landscape, as well as its data and social registry systems in Lao PDR and Sri Lanka. Annexes 1 and 2 contain more information on the List of Key Informants, Workshop participant lists, and agendas.

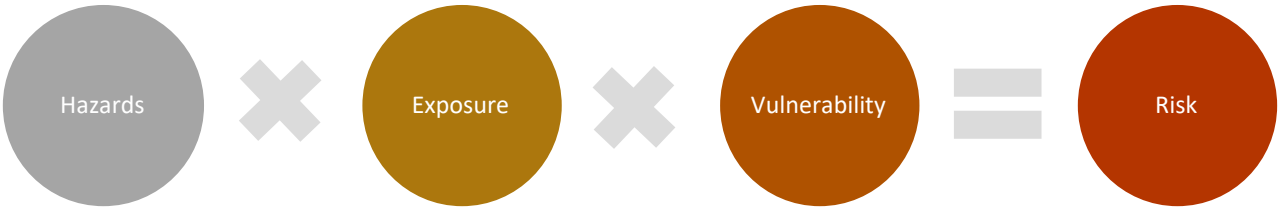
1.4.2. QUANTITATIVE AND GEOSPATIAL ANALYSIS

A climate vulnerability analysis identifies the likelihood of future climate hazards and their potential impacts. This quantitative and geospatial analysis aims to identify risk, assess the magnitude of impacts on people, and ascertain the possible options for action. For this study, Tetra Tech conducted a climate vulnerability analysis to assess if the geographical distribution of social registry beneficiaries overlaps with areas of elevated climate risks in the case study countries and also identified potentially vulnerable households that would face the risk of falling into poverty due to climate-related shocks because they are not currently enrolled nor covered by existing social protection programmes. The comprehensive climate vulnerability analysis involved a three-part - hazard, exposure, and vulnerability assessment (as summarised in Figure 2).

Hazard is defined as the probability of experiencing a certain intensity of hazard (e.g. Earthquake, cyclone, etc.) at a specific location and is usually determined by historical scenarios. The hazard analysis for this risk assessment aimed to identify the quantity, timing, and extent of historical and future hazards within the two case study countries. Tetra Tech used datasets produced by government counterparts like census projections, population counts, and household income expenditure surveys, as well as data from the Emergency Events Database (EM-DAT), World Bank Climate Knowledge Portal, and Dartmouth Flood Observatory to determine the most impactful climate hazards in each country.

The severity of the impacts of extreme and non-extreme weather and climate events depends strongly on the level of exposure to these events. Exposure represents the amount of people, property, infrastructure, or other assets exposed to a hazard. The study team conducted an exposure analysis, including computing a spatial measure of average climate hazard for three primary hazards per country: floods, droughts, and heatwaves (including landslides for Sri Lanka). Through this process, the team identified different types of exposure and computed an index of climate exposure using a weighted average of hazard sub-indices based on the type of socioeconomic activity referencing the Consolidated Livelihoods Exercise for Analyzing Resilience (CLEAR) zones[14] and DALaM 2021 data. In other words, the exposure analysis was weighted to account for the hazard that would

Figure 2: Climate Vulnerability Analysis Formula



Source: UNDRR (2015) Global Assessment Report.

14 CLEAR Livelihood zones were developed by WFP to better understand how food security is affected by climate risks. Livelihood zones, rather than administrative boundaries, are used as the main analytical unit. Focusing on livelihoods means the priority is placed on communities and what they do for a living. This helps

most impact each livelihood type. Hence, if specific economic livelihoods are not typically impacted by the potential hazards, there would likely be less disaster risk.[15]

It is possible for a household to be exposed to a hazard but not vulnerable, as vulnerability refers to how likely people or assets are to be impacted or damaged when exposed to a specific hazard. For the vulnerability analysis, Tetra Tech identified populations exposed to climate risk and assessed their socioeconomic characteristics (see Table 1 for a comprehensive list of datasets included). We computed the share and geographic distribution of the poorest households in the climate-exposed area, identified livelihood zones sensitive to climate variability, and determined the population eligible for social protection considering climate risk. The team encountered some limitations in accessing detailed demographic data at a local level due to variations in the availability of socioeconomic data by country, which are explored further in the limitations section. The Climate Risk and Vulnerability Analysis Technical Report linked in Annex 5 presents the full climate analysis.

Table 1: Datasets Utilized to Calculate Vulnerability and Exposure

Source	Relevant Variables	Most Recent Year	Spatial Scale[16]
Sri Lanka Socio-Economic Indicator Data			
Government Census projections	Population counts	2021	Admin level 3
Government Income and Expenditure Survey	Poverty headcount; SP transfer amounts	2019	Admin level 3
WFP CLEAR	Livelihood zones	2015	Custom polygons
FAO/WFP Crop and Food Security Assessment Mission (CFSAM)	Food Insecurity Rates	2022	Admin level 3
UNDP Multidimensional Vulnerability Index	Representative survey of Samurdhi beneficiaries includes adaptive capacity indicators, disaggregated information by gender & age	2022	Admin level 3
WFP Child Nutrition Data	Averaged underweight, stunting and wasting rates for children under 5	2022	Admin level 4
Lao PDR Socio-Economic Indicator Data			
Government Census	Poverty headcount, population, demographics, village infrastructure	2015	Admin level 4

understand how climate affects people, rather than geographic areas.

15 Cardona, O.D., et.al. (2012). Determinants of risk: exposure and vulnerability. In: Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation. A Special Report of Working Groups I and II of the Intergovernmental Panel on Climate Change (IPCC).

16 The spatial scale refers to the lowest administrative level used for analysis where Admin 1 equates to Provinces, Admin 2 related to districts, and Administrative levels 3 & 4 equate to the Divisional and Village level data.

Source	Relevant Variables	Most Recent Year	Spatial Scale[16]
Laosis Population Count	Population count	2022	Admin level 3
MONRE Livelihood Zones - DALaM 2021 data	Livelihood zones	2021	Custom polygons

1.4.3. LIMITATIONS

The study encountered some limitations in terms of collection and use of data. One significant challenge was the difficulty in accessing detailed data from the social registries. The lack of access to comprehensive social registry data meant that the climate vulnerability analysis used proxy indicator data for social protection programme beneficiaries and, therefore, estimated the geographic areas of high vulnerability. Socioeconomic datasets were used as a proxy for actual eligibility criteria, which may not fully capture the nuances of eligibility and enrollment in social protection programmes. The reliance on proxy indicators and secondary data sources may have also introduced biases and inaccuracies in the findings.

The study also faced further constraints in data availability and quality. In some cases, data were fragmented across different ministries and organisations, making it difficult to create a comprehensive view of climate vulnerability and social protection needs. Multiple datasets were considered, but not all could be utilised due to varying resolutions and availability (as noted in Table 1 – Annex 5).

Additionally, the absence of direct discussions with beneficiaries limited the study's ability to incorporate firsthand insights and experiences. Engaging with beneficiaries could have provided valuable perspectives on the effectiveness and accessibility of social protection programmes, as well as the specific challenges faced by vulnerable populations in registering for and accessing social protection services. In the absence of direct engagement, the study utilised a mix of existing social protection programme reviews conducted by the World Bank and key informants to confirm the validity of our findings and recommendations.

Overall, these limitations highlight the need for improved data access, integration, and stakeholder engagement to enhance the effectiveness of social protection systems in addressing climate risks. Across the board, the integration of climate risk data into social registries remains underutilised, limiting the ability to accurately identify and support populations vulnerable to climate-related shocks.

2. Situating the Need for Climate and Social Registry Data Integration

2.1. Adaptive Social Protection Systems

Adaptive, or shock-responsive, social protection systems are systems that can be scaled up and scaled down quickly, especially during shocks and crises, when expanding the system is paramount. Expansion can be horizontal, which means covering more people with social protection systems, or vertical, covering the same people more in-depth, with higher benefits.

Building an adaptive social protection system that responds to climate shocks involves improving existing social protection arrangements along four key building blocks: (1) programmes, (2) finance (3) data and information systems, and (4) institutional arrangements (Figure 3). To develop such systems, countries need strong social registries and good enrolment, delivery, and payment systems, often leveraging technology. Solid partnerships across government ministries, from disaster management to finance and social protection, are also critical. This study primarily focuses the analysis on the third building block, and makes the case for why data, information systems, and social registries are pivotal to ensuring adaptive social protection systems.

2.1.1. LINKING TO PROGRAMMES

On a programmatic level, there are multiple ways to incorporate climate considerations into the design and implementation of social protections. This includes but is not limited to determining the timing of responses (e.g., before or after a shock), deciding where and to whom assistance should be directed, and selecting appropriate response options. Shock assistance transfers are typically based on objective criteria for eligibility and activation and can be implemented as additional support for existing beneficiaries (vertical expansion), an extension of social assistance to new recipients affected by the climate shock (horizontal expansion), or a combination of both. Additionally, programme design features can be adapted (e.g., removing conditionality) without necessarily changing transfer values or expanding the number of beneficiaries.

Figure 3: Adaptive Social Protection Building Blocks Framework

Source: Bowen, Thomas, del Ninno, et al. (2020) Adaptive Social Protection: Building Resilience to Shocks.

2.1.2. LINKING TO FINANCE

Under the financial building block, adaptive and shock-responsive social protection programmes will pre-determine the modality of assistance, whether it be cash or in-kind, to households most affected by climate-related disasters, such as severe droughts or floods, at various stages—before, during, or immediately after the event, and will conduct potential assessments on the

predicted cost of future responses. Adaptive social protection can also be linked to climate and disaster risk financing instruments. Climate and Disaster Risk Financing and Insurance (CDRFI) involves pre-arranged financial mechanisms that support risk layering to protect individuals, businesses, and governments against the financial impacts of climate-related disasters, enhancing disaster risk reduction, early warning, and preparedness.[17] While definitions may vary, CDRFI emphasises pre-arranged funding for specific shocks and objective criteria for disbursing financial resources. For example, Parametric insurance,[18] is a CDFRI instrument in which insurance payouts are disbursed to enrolled households if some agreed-upon metric of weather severity in their area exceeds a given threshold.[19,20] As part of social protection programming, parametric insurance requires real-time, local-level sources of data on weather, hydrology, and vegetation conditions, for which there is a large amount of globally available data from satellites and in situ observations.[21] Unlike traditional insurance products, a parametric insurance index requires quantification of historical loss against hazards, which could result in Basis Risk,[22] which must be managed.

2.2. Data and Information Systems

Data and information strengthening are at the core of the adaptive and shock-responsive social protection agendas. Climate shocks will inevitably impact various populations differently due to different exposure and vulnerability levels to climate hazards. To effectively prevent, mitigate, or respond to impacts, it's crucial to understand population characteristics, use data systems for planning and response, and assess the intensity and likelihood of events. This knowledge supports the adaptive social protection agenda by informing the design of adaptive programmes and systems. Data is, therefore, essential for profiling vulnerabilities and implementing targeted interventions both before and after shocks occur.[23] Even forecast-based anticipatory action relies on strong data and information systems to support the development of early warning messages that can prompt social protection support in anticipation of potential climate-related disasters.[24] Using advanced weather predictions and climate data to inform actions, responders can mobilise assistance before a hazard strikes rather than waiting until after the event. The anticipatory action forecasts can range from hours to days for storms, weeks in advance for riverine flooding, and months for slow-onset disasters like drought.[25]

Social protection systems that are adaptive and shock-responsive also create significant links to information systems that are typically disconnected from the social protection sector.[26]

17 WFP (2024). Understanding Climate and Disaster Risk Finance and Insurance Solutions in the Asia Pacific.

18 Parametric insurance, also known as index-based insurance, is a type of insurance that provides a pre-determined payout when a specific event occurs, rather than compensating for the actual loss incurred.

19 Benso, M. R. et al. (2023). Review Article. 1335–1354.

20 WFP (2023). Linking disaster risk financing with social protection: an overview of concepts and considerations.

21 Benami, E. et al., (2021). Uniting Remote Sensing, Crop Modelling and Economics for Agricultural Risk Management, Nature Reviews Earth & Environment 2, no. 2: 140–159.

22 In parametric insurance, basis risk is the possibility that the payout from parametric insurance will differ from the actual losses experienced by a policyholder. This can happen when the index used to determine the payout doesn't match the actual losses.

23 Kelly Johnson and Thomas Walker, eds. (2022). Responsive by Design: Building Adaptive Social Protection Systems in South Asia. Washington, DC: World Bank.

24 Johnson and Walker (2022).

25 Boult, V. L. et al., (2020). Evaluation and Validation of TAMSAT-ALERT Soil Moisture and WRSI for Use in Drought Anticipatory Action. Meteorological Applications 27, no. 5.

26 Asha Williams and Vanessa Moreira (2020). Making Social Protection Information Systems Adaptive. World Bank

By delving deeper into understanding household risk and vulnerability to shocks and identifying who is most at risk and which types of shocks they are likely to face, more effective programmes can be designed. To achieve this, a multisectoral approach is necessary for collecting, sharing, and analysing data. For instance, insights from disaster risk management (DRM) analyses can enhance our understanding of disaster risk from historical data on hazard incidence, exposure, and vulnerability. Integrating these findings with data routinely collected and used by social protection programmes, like household-level poverty, creates a more comprehensive view of vulnerability to shocks, which can then inform decision-making around the other building blocks.

Notably, social registries containing information on beneficiaries and non-beneficiaries play a key role in strengthening the information systems that support social protection programme delivery and often provide the information base for building resilience and scaling up after a shock.[27] From a functional point of view, social registries are systems that help collect data on different communities for different programmes. Social registries can help inform populations of different kinds of social protection programmes. It's an inclusionary tool that can be used cross-sectorally, and by doing so, social protection programmes can achieve:

1) Improved geographic targeting based on exposure and vulnerability to climate shocks: Integration of climate and weather data into SP information systems can help inform both short-term decisions around geographic targeting and medium to long-term decisions about planning for where future vulnerabilities to climate and weather-related hazards will likely appear. By linking climate risk information to the social registry, social protection programmes can use early warning systems and remote sensing to monitor and map the impact of climate hazards in specific locations. For instance, in the Philippines, the Disaster Response Management Bureau utilised the social registry, Listahanan, to aid its response through geographic targeting and estimating the number of households at risk of being affected by a typhoon based on its anticipated path (See section 2.3.2).

2) Precise assessment of household vulnerability to climate shocks: When social registries include a household-level climate risk indicator (based on a comprehensive climate hazards, exposures, and vulnerabilities analysis), they can identify who is most affected and in need of support when a climate hazard strikes. Integration of such climate risk information enables the identification of households at risk of being pushed into poverty due to a climate shock, though they do not meet the traditional eligibility criteria for benefits, such as a Proxy Means Test. Identifying these vulnerable households is essential for many reasons, such as informing the design parameters of current programmes and effectively and efficiently responding to climate-related shocks. With household-level climate risk informants, social assistance programmes can quickly expand assistance to impacted communities when in need. For example, Pakistan is incorporating climatic vulnerability data into its new Proxy Means Test (PMT) and is also working to map geographic coordinates for all registered households. This initiative aims to better balance rural-urban and provincial indicators and include agro-climatic zone data. By doing so, it seeks to more accurately target populations whose livelihoods are at risk from climatic shocks like floods and droughts.[28] Effective targeting for shock-responsiveness has direct links with the exposure to and ability to cope with specific shocks.

To effectively respond to climate-related disasters, social assistance programmes can consider integrating climate information into their social protection information systems, including social registries.

27 Leite (2017). Social Registries for Social Assistance and Beyond: A Guidance Note & Assessment Tool

28 UNICEF (2019). Programme Guidance: Strengthening Shock Responsive Social Protection Systems

2.3. Progress in Connecting Climate to Social Registries in Asia and the Pacific

2.3.1. STATUS OF THE REGIONAL SOCIAL REGISTRY LANDSCAPE

In Asia and the Pacific, social protection systems have become increasingly vital for addressing food security, malnutrition, and protecting populations from various risks and shocks. Over the past decade, these systems have been significantly strengthened and expanded to cope with challenges such as economic crises, health emergencies, conflicts, and climate change (Figure 4).

Figure 4. Social Protection Coverage by Sub-region in 2023

Source: ILO modelled estimate (2024).

Countries in the Asia Pacific region increasingly recognize the importance of integrating climate analytics into social protection systems to create adaptive and resilient social protection mechanisms. Social registries, as a main feature of social protection information systems, play a crucial role in the landscape by serving as decision-making tools that store data on actual and potential beneficiaries, manage programmes, and monitor outcomes. The maturity and effectiveness of these systems vary widely across the region. For instance, countries like Afghanistan and Myanmar have nascent systems characterised by high fragmentation and minimal digitalisation,[29] while nations such as Indonesia and the Kyrgyz Republic boast established, fully digitised, and interoperable systems.[30] Efforts are underway to strengthen social registries in countries like Nepal, Pakistan, the Philippines, and Bangladesh, driven by the need to improve targeting, coordination, and integration of social protection programmes, spurred in part by responses to the COVID-19 pandemic.[31]

2.3.2. PROGRESS TOWARDS INTEGRATING CLIMATE RISK DATA INTO SOCIAL REGISTRIES

Despite the advancements in social protection information systems, the integration of climate risk data into these systems remains limited in the Asia-Pacific region. Some progress has been made though, with countries like Bangladesh, Indonesia, and the Philippines taking initial steps to integrate such data into their social protection frameworks.[32] For example, Bangladesh has worked on integrating climate-risk data into its social registry and the National Household Database to improve the targeting of social protection programmes, thereby reducing costs and enabling them to better support vulnerable populations during disasters.[33] The Philippines has also focused on improving the efficiency and

29 WFP (2024). Social Protection Information Systems in Asia and the Pacific.
30 WFP (2024).
31 WFP (2024).
32 WFP (2024).
33 Government of Bangladesh (2022). Social Protection in Bangladesh, a Common Narrative

effectiveness of its social protection programmes in response to natural disasters[34] (see Box 1). Currently, driven by their 5-year roadmap, "Establishing an Adaptive and Shock Responsive: Social Protection System in the Philippines," there is a country wide focus of not only integration across programmes but the prioritisation of climate-smart strategies.[35] Some plans include integrating early warning systems, disaster risk financing mechanisms, and flexible delivery systems.[36]

Incorporating climate-risk data into social registries and subsequent social protection programming is essential for identifying vulnerable populations and providing targeted support before, during, and after climate-related disasters. A few countries in the regions, such as Cambodia and Pakistan are successfully modelling how efforts to improve interoperability amongst social registries and other information systems can support improved targeting for social protection interventions.

Cambodia has been historically exposed to nearly all types of climate-related shocks that disproportionately affect vulnerable households. The government of Cambodia, in collaboration with WFP, utilised the Platform for Real-Time Impact and Situation Monitoring, or PRISM, to enhance its social protection interventions by integrating geospatial data on natural hazards with socioeconomic vulnerability information from their IDPoor database.[37] This allowed for real-time risk analysis and visualisation, enabling the government to make informed decisions, develop risk mitigation plans, and implement targeted support for vulnerable populations during disasters. Because of the interoperable data systems, Cambodia was able to pilot a new national cash-based social assistance programme focused on enhancing anticipatory actions for flood-prone households.

Box 1: Regional Example - The Philippines

In 2013, Typhoon Yolanda hit the Philippines. As one of the most powerful typhoons ever recorded, it wreaked havoc on lives and economic livelihoods. Tapping into the country's universal social registry, the "National Household Targeting System for Poverty Reduction" (also known as "Listahanan"), the DSWD used household-level targeting to create a rapid response programme for those most affected. Every national-level government agency is mandated, by the country's conditional cash transfer programme, to use and report data into Listahanan to identify and track household-level poverty status and use. Two main components of the programme include:

1) Geographic targeting: As part of its proxy means test, the Listahanan considers geographic location and exposure in its assignment of vulnerability. By filtering households by typhoon-affected locations and poverty levels, the DSWD and many other agencies quickly assessed who needed immediate assistance and responded accordingly, reducing potential lags in service delivery.

As part of their five-year roadmap, the DSWD will integrate more climate considerations into the Listahanan. These will include early warning systems information, disaster risk financing mechanisms, and flexible delivery systems.

2) Identification of Pockets of Poverty (POP): DSWD adopted a uniform process in determining POPs using a standard list of 10 indicators that include vulnerability to climate and non-climate hazards.

34 UNESCAP (2024).

35 DSWD and FAO (2020).

36 Bowen (2020).

37 Shafee and Zapata (2023). Leveraging climate risk data tools to inform social protection. WFP.

As mentioned in section 2.2, Pakistan, is also enhancing its adaptive social protection system by promoting interoperability across ministries. Key efforts include improving data integration and coordination across various agencies, which is essential for creating a cohesive and responsive social protection framework. They are integrating climate vulnerability data into its new Proxy Means Test (PMT) and mapping the geographic coordinates of all registered households. By doing so, it seeks to more accurately target populations whose livelihoods are at risk from climatic shocks like floods and droughts.[38]

These examples highlight the progress being made in the region, as well as the challenges and gaps that remain. Beyond the champions highlighted, efforts to link social registries and climate risk data are still in the early stages in the Asia Pacific region. Many countries still lack the necessary infrastructure and data systems to fully integrate climate risk and social protection information. The challenges include limited technical capacity, insufficient data, and the need for greater coordination between different sectors and agencies.[39] By incorporating climate risk data, social protection programmes are becoming more efficient in profiling and supporting vulnerable groups, and as climate impacts intensify, there will continue to be an urgent need to accelerate these efforts to ensure that social protection systems can effectively respond to and mitigate the effects of climate change.

38 UNICEF (2019). Programme Guidance: Strengthening Shock Responsive Social Protection Systems

39 WFP (2024).

3. Case Study: Lao Peoples Democratic Republic

3.1. Contextualizing Climate Vulnerability

Lao PDR faces a unique set of climate-related hazards—flooding due to river overflow and storm surge, agricultural drought, and heat waves. Most major climate hazard exposure in Lao PDR occurs with flood hazards that are geographically confined to areas of the Mekong River Basin and its major tributaries, with Vientiane being one of the most flood-prone areas. According to the Asian Development Bank, 83 percent of households in Vientiane have faced recurring flood impacts over the past decade, with an average of 60 percent crop loss during heavy floods.[40] This represents a major risk for the 70 percent of the population reliant on agriculture as a primary source of income[41]. As recent as in September 2024, tropical cyclone YAGI triggered floods and landslides in northern Lao PDR, affecting the provinces of Luang Namtha, Phongsaly, Oudomxay, and Bokeo. In Luang Namtha, 40,000 people in two districts are impacted. Rising Mekong River levels have also caused flooding downstream, affecting Hadsayphong district in Vientiane.[42] Drought hazard, by contrast, is concentrated in the highland plateau areas of the country. Extreme heat is most acute in the central and south.

According to the World Bank Hazard Inventory, floods are also the most common type of natural hazard in Lao PDR (with 19 registered events from 1981-2020), followed by storms (8 recorded events) and droughts (5 recorded events).[43] Analysis of more flood-focused disaster inventories (EM-DAT and Dartmouth Flood Observatory) finds that riverine and storm-based flooding affected the most people and caused the most economic damage. However, news-based impact data is relatively sparse for the country.

According to the CMIP6 Shared Socioeconomic Pathway 8.5 scenario projections of climate change by 2040, there is a large amount of uncertainty in projections of precipitation change, with the direction of probable change needing to be clarified in most of the country. An exception is the far south, which has some indication of probable rainfall increase in the median of modelled projections. By contrast, the temperature is set to increase across the country unambiguously. To put these projections in context, 1982-2022 observations show a general upward trend in rainfall, but this masks some regional diversity, with some areas being more affected by decadal patterns of variability. The far south is the area most clearly getting wetter on average over the last 40 years, while the overall trend in the north and central areas is ambiguous.

The Climate Vulnerability Analysis (CVA) Technical Report linked in the Annex presents the full climate analysis for Lao PDR.

40 Asian Development Bank (2021). Strengthening Climate Resilience in Lao PDR: Impacts of Flooding on Agriculture.

41 United Nations Office for Disaster Risk Reduction (2019). Global Assessment Report on Disaster Risk Reduction.

42 WFP LAO PDR (2024). Flood Situation Update #5, September 2024. https://reliefweb.int/report/lao-peoples-democratic-republic/wfp-lao-pdr-flood-situation-update-5-23-september-2024

43 World Bank (2024). Climate Knowledge Portal

3.2. The Social Protection System in Lao

The social protection system in Lao PDR has undergone significant advancements. The Government of Lao PDR has undertaken initiatives to preserve the populace's well-being, particularly those most susceptible to shocks and stress. The nation has diligently endeavoured to formulate an inclusive social protection framework with the collaboration of diverse international entities. The Constitution of Lao PDR (Articles 28 and 38) emphasises the imperative of implementing social protection policies to bolster varied aspects of social welfare, notably highlighting healthcare and socio-economic development.

The country's social protection expenditure is low, accounting for approximately 1.4 percent of the gross domestic product (GDP). About half of the total social protection budget is allocated to healthcare-related protections. While 51.8 percent of the population is covered by a universal health protection scheme, only 15.5 percent have access to other social protection programmes.[44]

3.2.1. INSTITUTIONS ARRANGEMENTS

The National Social Protection Strategy (NSPS), which governs ministerial response to social protections, aims to ensure universal access to essential social protection services for all Lao residents, regardless of age, gender, geographic location, or socio-economic status. Recognising the crucial role of social protection in reducing poverty and inequality and protecting people from socioeconomic shocks, environmental disasters, and vulnerabilities, the NSPS aims to strengthen and further develop the three main social protection pillars: health insurance, social security, and social welfare. Specifically, the strategy outlines objectives to guarantee access to healthcare services for all, extend social security schemes to workers in both formal and informal sectors, and enhance social welfare services for those living in poverty, vulnerable groups, and victims of disasters.

The Ministry of Labor and Social Welfare (MoLSW) also plays a significant role holding dual responsibilities for administering social protection programmes, such as social security programmes, including pensions, health insurance, and unemployment benefits through the Lao Social Security Organization (LSSO), and responsibilities related to disaster risk management (DRM), working alongside the Ministry of Natural Resources and Environment (MoNRE). The Ministry of Agriculture and Forestry (MAF), in partnership with the Ministry of Home Affairs (MOHA) plays a critical role in managing the social registry, ensuring accurate data verification and linkage with the civil registry ensures that individual identities are accurately verified and matched with socio-economic data from the social registry managed by MAF. This collaboration is pivotal for enhancing the targeting of beneficiaries in social protection programmes including the Helping Hand programme.

3.2.2. KEY SOCIAL PROTECTION PROGRAMMES

Lao's social protection landscape includes several complementary social assistance programmes (see Table 4). The National School Meal Programme (NSMP) addresses nutritional deficiencies that affect children's education, covering over 183,000 children, and will be managed by the Ministry of Education and Sports until 2030. The "Helping Hand" programme provides cash grants to poor and vulnerable households in four provinces to reduce poverty and enhance maternal and child health outcomes. The National Health Insurance (NHI) scheme, which expanded to cover 94 percent of the population by 2021, faces challenges such as

44 ILO (2024).

additional fees, leading to a revised strategy for 2021-2025. The Lao Social Security Organization offers social security benefits for employees and their dependents. Additionally, the Maternal, Newborn, and Child Health (MNCH) programme aims to reduce maternal mortality and improve access to healthcare, while the Mother and Early Childhood Grant (MECG) focuses on enhancing health indicators for mothers and children from the first trimester to 12 months of age.

The Government leverages social protection systems to respond to disasters. During the COVID-19 crisis, the Lao PDR government extended emergency income support to over 20,000 garment workers, including individuals who were ineligible for government assistance because they were not registered with the Lao Social Security Organization (LSSO) or had contributed for less than 12 months. The initiative leveraged LSSO's established delivery systems to minimise administrative expenses and expedite distribution, thus alleviating pressure on the national unemployment insurance scheme. In addition, in 2018, the government delivered cash transfers to people who had been displaced due to floods. The WFP, in collaboration with the Department of Social Welfare Offices, supported the delivery of these unconditional cash transfers of US$ 1.2 million in three rounds, to 32,889 recipients in 6,388 households in three districts, targeted to be the most vulnerable.[45] Furthermore, LSSO has piloted new payment methods, including electronic transfers through local mobile network operators, enhancing financial inclusion for garment workers, particularly those lacking bank accounts.[46] Multiple social assistance programmes complement Lao's social protection landscape as outlined in Table 2.

3.2.3. DATA AND INFORMATION SYSTEMS

The Government of Lao PDR, through MAF, uses a variety of data sources to target different social protection programmes. With support from the World Bank, the Government of Lao is advancing the development of a social registry that aims to create a comprehensive database that includes information on households and individuals, mainly focusing on vulnerable populations. The Social Registry is designed to support broader social protection initiatives and improve the efficiency of social services delivery under the framework of the National Social Protection Strategy. While the Helping Hands CCT programme has utilised the social registry in its initial implementation, the development of the social registry is a critical component of the government's strategy for future social assistance programmes, particularly in enhancing targeting accuracy and coverage. This effort is part of a broader strategy of the Helping Hands programme to enhance social protection systems and improve the delivery of social services. Currently, the Social registry has reached 98 percent national coverage, covering 1.1 million households.[47] The Ministry of Agriculture and Forestry (MAF) manages the social registry, with additional oversight on data security by the Ministry of Posts and Telecommunication. Under the second phase of the Helping Hands Programme, the MAF and World Bank will expand their targeting to the Southern provinces, with a plan to include climate vulnerability indicators to better target and deliver social assistance programmes, ensuring that resources reach those who most need them.

The government conducts annual poverty assessments to compile a list of impoverished households at the local level, in alignment with national poverty standards. However, this process mainly focuses on gathering aggregate data, such as the number of poor households, to monitor progress toward poverty reduction objectives. It does not serve as the basis for targeting national poverty alleviation initiatives, which are still limited.

45 UN CERF (2018).

46 ILO (2021).

47 Internal figures as reported during KIIs with MAF, Lao PDR, as of June 2024.

Table 2. Social Protection Programmes in Lao PDR

National School Meal Programme (NSMP)	The programme aims to improve school enrollment, and attendance and address nutritional deficiencies among children. It includes providing daily meals, promoting hygiene practices, and supporting local agriculture. The programme covers primary and secondary schools, benefiting over 1.5 million children. It is implemented by the Ministry of Education and Sports, with support from international donors and local communities.
Helping Hand Programme (HHP)	As Lao PDR's first conditional cash transfer scheme, Helping Hand aims to alleviate poverty and malnutrition among vulnerable households, particularly those with pregnant women and children under two, by addressing consumption needs and improving human capital. The programme provides cash transfers to improve diet diversity and access to essential health services, which is complemented by monthly health and nutrition counselling sessions. Currently covering 12 districts with high poverty and child stunting rates, the programme will expand this year to cover an additional 13 districts. As of June 2021, Helping Hand had enrolled 11,006 beneficiaries.[48] The Ministry of Agriculture and Forestry implements the programme with support from international donors.
National Health Insurance (NHI) scheme	Launched in 2016, the NHI aims to provide universal health coverage, ensuring equitable access to healthcare and financial protection. It includes outpatient and inpatient services, with special provisions for pregnant women, children, and the poor, offering low – and no–copay options for health services. The scheme covers all 17 provinces, having reached over 94 percent of the population post Covid-19.[49] The scheme is implemented by the National Health Insurance Bureau under the Ministry of Health.
Lao Social Security Organization (LSSO)	Established in 2000 following the enactment of Decree 207/PM, LSSO plays a vital role in ensuring social security benefits for employees of private sector companies, state-owned enterprises, and their dependents in Lao PDR. The LSSO is responsible for providing and managing social security benefits such as healthcare, unemployment, financial allowances for illness, work accident benefits, and pension benefits. LSSO operates nationwide covering 11.5 percent of the population, which includes mostly formal, public-sector workers.[50] Ministry of Labor and Social Welfare implements the programme.
Maternal, newborn, and child health (MNCH) programme	The MNCH programme focuses on safeguarding maternal, newborn, and child health through various interventions and strategies that reduce maternal mortality rates, improve access to essential healthcare services for newborns and children, enhance nutrition outcomes, and strengthen primary healthcare systems. The programme distributes support by collaborating with more than 230 health centres and district hospitals, involving 650 health workers and engaging with over 1,500 village health communities across 24 targeted districts within five provinces to deliver their services.[51] The programme covers all provinces, targeting pregnant women, newborns, and children under five. It is implemented by the Ministry of Health, with support from international organisations and local health workers.
Mother and Early Childhood Grant (MECG)	Coordinated by the Ministry of Labor and Social Welfare, with the support of UNICEF and the Australian Government, the programme seeks to improve Maternal, Neonatal and Child Health (MNCH) indicators in the country by serving mothers & children from the first trimester to 12 months of age providing cash benefits to pregnant women and newborns. They use the MECG Management Information System (MIS), a web-based software solution consisting of a web dashboard and mobile app for programme delivery.

48 Kawasoe and Avalos (2021). Enhancing the Conditional Cash Transfer Experience in Lao PDR: the Beneficiary Feedback Survey. World Bank.

49 Lao PDR Ministry of Health (2022). National Health Insurance Strategy 2021–2025.

50 ILO (2024).

51 USAID (2023).

The data sources used for targeting in various social protection programmes include the Lao Expenditure and Consumption Survey (LECS), which is conducted every five years; the Lao Social Indicators Survey (LSIS), with the most recent iteration (LSIS III) undertaken in 2023; a database of poor beneficiaries identified by district authorities, who are currently exempt from healthcare co-payments; the Ministry of Labor and Social Welfare (MoLSW) database of registered emigrant workers; the LSSO database of active and inactive members; and a census-sweep survey for the MAF & WB Helping Hands programme, conducted in four provinces between 2020 and 2021, which identified 52,487 households as poor and vulnerable.

3.3. Integration of Climate Risk in Social Protection Systems – Key Findings

I. THE CLIMATE VULNERABILITY OF LAO PDR NECESSITATES BETTER INTEGRATION OF CLIMATE DATA FOR SOCIAL PROTECTION PROGRAMMING.

Lao PDR has several sources of climate risk data[52], but they are fragmented across different ministries. Data fragmentation is particularly noticeable in disaster information from various ministries, such as the Ministry of Agriculture and Forestry (MAF), the Ministry of Labor and Social Welfare (MoLSW), and the Department of Meteorology and Hydrology under the Ministry of Natural Resources and Environment (MoNRE). Each ministry maintains their own specialised database, leading to data fragmentation and making a comprehensive view of climate vulnerability difficult to obtain. For instance, the Department of Meteorology conducts climate risk assessments including floodplain mapping and drought frequency metric[53]. MoNRE also provides data on hazards such as floods, droughts, and storms. In addition, MAF collects data on climate change's impact on water resources and agricultural production. The Lao Statistics Bureau collects data on environmental statistics indicators, including disaster data, collected from MoLSW. Despite national efforts to spur more open data-sharing arrangements and central repositories, as seen in Table 5, sharing and use of this data across ministries for social protection programming is still limited. Data sharing agreements among agencies remain at an early stage, and are mostly facilitated through ad hoc inter-ministerial requests. As a result, planned integration of social registry data with climate risk data that other agencies may have, remains limited, thereby reducing the effectiveness of social protection programmes in addressing climate-induced vulnerabilities. It is worth noting that the social registry includes indicators on floods and landslides, but not other disasters.

The Department of Climate Change under MoNRE has conducted vulnerability assessments using data on temperature, rainfall, hazard exposure, potential impacts, and adaptive capacity to support decision-making with the support of UN-Habitat.[54] The first assessment was carried out in 2020 at the district level, with some data from the village level, and a new assessment is currently underway to inform their National Adaptation Plan (NAP). However, the baseline data has been insufficient. The Department of Meteorology and Hydrology (DMH) data does not cover all geographic areas, with only 58 stations nationwide, leading to inaccurate forecasts and projections. Historical data needed to inform climate models and the necessary capacity to address these gaps are also missing.

52 See the joint ADPC/WFP (2024) Feasibility Study on Anticipatory Action in Lao PDR in Annex 1, for a well-compiled list of vulnerability data and their sources.

53 Asian Development Bank (2021), Strengthening Climate Resilience in Lao PDR: Flood Risk Management and Early Warning Systems.

54 UN-Habitat (2020). Climate Change Vulnerability and Risk: A Guide for Community Assessments, Action Planning and Implementation.

The Asian Disaster Preparedness Center (ADPC) and WFP have been supporting the government in developing an Impact Based Forecasting (IBF)[55] capacity assessment and an IBF action plan to help inform the development of multi-hazard IBF system in Laos. To start that process, ADPC conducted intensive assessments and Key Informant Interviews (KII) with stakeholders to collect village-level data on vulnerability, exposure, and risk. Integrating data from the social registry into Lao PDR's early warning systems could enhance the targeting and effectiveness of anticipatory actions. By leveraging the comprehensive household and individual data available in the social registry, line ministries such as the MoLSW can more accurately identify and prioritise vulnerable populations for early interventions and account for the diverse needs of people with disabilities, thereby improving the responsiveness and efficiency of inclusive disaster preparedness efforts.

Table 3. Open Source/Open Access Climate Risk Data Repositories

Repository Name	Description
Lao Disaster Information (LaoDI)	Based on the Desinventar system, LaoDI serves as a repository for disaster information at the Ministry of Labor and Social Welfare. LaoDI has been supported by UNDP and UNDRR as part of a multi-phased initiative with the Ministry of Labor and Social Welfare. The first phase involved acquiring a new domain, setting up a server, restoring lost data, and updating disaster loss and damage data from 2013 to 2023. The platform aims to consolidate risk data for all of Lao PDR.
Lao Land Resources Information Management System (LRIMS)	LRIMS was developed by the Department of Agricultural Land Management (DALaM) of the Ministry of Agriculture and Forestry and in collaboration with the Department of Meteorology and Hydrology through the SAMIS Project. The repository provides maps of cropland areas, soil, land use, and livelihood of farmers.
LAOSIS	LAOSIS is the national statistical database operated by the Lao Statistics Bureau. They host statistical datasets across various sectors, from Health and Education to Climate and Agriculture, as well as reports on economic, demographic, poverty, and social indicators.
Knowledge for Development Lao PDR (K4D.La)	Fostering a culture of open data, K4D.La platform institutionalises information sharing, integration, and analysis processes. K4D.La promotes cross-sectoral and vertical integration of key national datasets shared by various departments and several ministries, covering a range of thematic sectors. The system is hosted and managed by the Ministry of Agriculture and Forestry (MAF), and the individual datasets are provided and managed by the respective sectoral offices and ministries.
Land Concessions Information System (LCIS)	The National Land Concessions Information System LCIS is a web-based information-sharing and integration platform internal to the government. It seeks to compile and integrate spatial, statistical, and documentary information on all land concessions throughout Laos that have been granted at either national, provincial, or district levels. Currently, the information base focuses on concessions in the sectors of agriculture, tree plantation, hydropower, mining, and special economic zones.

55 Traditionally, weather forecasts have predicted what the weather will be, while impact-based forecasting focuses on the potential effects, taking into account the vulnerability of people and property, and warns of the likely impacts.

II. LAO'S SOCIAL REGISTRY IS ADVANCING TOWARDS FULL COVERAGE, INTEROPERABILITY, AND MULTI-PURPOSE SHARING.

The social registry in Lao is currently administered by the Ministry of Agriculture and Forestry (MAF), as mandated by the Prime Minister's Decree 348 on the criteria for Poverty Graduation and Development, 2017. The social registry is accompanied by a HIT Map that shows the provinces ranked according to poverty levels, allowing the possibility of identifying poor people at the village level.

The social registry is populated by data collected using the household assessment form (HAF), a 49-item questionnaire on household identification and socio-economic condition. The HAF is divided into two parts. The first part includes questions about the individual, while the second part has information on the household. The data collected using the HAF is encoded and uploaded to the central database, which is then analysed and assigned a PMT score to determine poor and non-poor status. According to the recent poverty assessment by Prime Minister's decree 348, the total number of poor households in the social registry is 21 percent. This system enables the government to identify households at risk of falling into poverty and informs the design and targeting of social protection interventions.

MAF developed the social registry with technical support from the World Bank and is currently managing it. MAF has also presented the funding needs to the Ministry of Finance to ensure that the registry is updated and maintained. In addition to MAF, the Ministry of Posts and Telecommunication acts as the oversight agency to ensure the registry's security and electronic data protection. MAF is also responsible for facilitating the integration of the social registry system with the citizen data managed by the Ministry of Home Affairs (MOHA). This includes requesting authentication of individual data (names, locations, birthdates) from MOHA to ensure accuracy and unique identity. For a registry to become interoperable, there are a few necessary requirements, including a unique identification number (UIN), Application Programming Interfaces (APIs) and data sharing protocols. The Civil Management Information System (CMIS) in Laos assigns a UIN when a birth is registered. MAF has also been working to improve the current API for the social registry.

While the social registry is only used by a few agencies so far, MoUs to access the registry are under development, and provisions have been put in place to make the social registry data available to other ministries and development partners. This can be done by following three steps: filing a data request form, signing a memorandum of understanding, and providing proof of compliance with data protection requirements. MAF is also negotiating access to the social registry database with partners such as FAO, WFP, and USAID. Since the beneficiary database of the Helping Hand programme is integrated with a third-party payment provider called Unitel (U-Money), via an Application Programming Interface (API), other partners could find it advantageous to leverage these established systems for their planned interventions, particularly when addressing climate risks. All these indicate that the system is gradually strengthening the building blocks for an interoperable system.

Enrollment in the Helping Hand programme occurs monthly. MAF appoints community mobilizers and village facilitators who visit villages each month to enrol households with a newly pregnant woman or those that have fallen into poverty. For households currently not targeted by the project, updates are made annually. MAF aims to implement quarterly updates to the registry to ensure that other programmes and ministries relying on it can access the most current data.

According to key informants, the rates of exclusion (37 percent) and inclusion (39 percent) errors in the social registry remain high.

However, efforts are underway to significantly address these issues by 2025. In cases of exclusion, households must submit a complaint, which is then verified through a spot check by a community mobiliser or village facilitator appointed by MAF. This process is followed by certification of the household's poverty status. If a verification indicates wrongful exclusion, the household can be integrated into the registry within ten days, with an update to the social registry made promptly.

Other line ministries can notify MAF of inclusion or exclusion errors and can manage the enrollment or removal process through their respective units, provided that the household's poverty score is certified and meets the eligibility criteria. Ongoing verification support from different line ministries, along with the digitalisation of data collection and management, will enhance the accuracy of the social registry data. Implementing more digital systems and increasing the frequency of data collection could further reduce the need for verification and validation processes.

While the social registry is a key tool for targeting social protection interventions, it currently lacks climate exposure and vulnerability indicators, which are critical for identifying those at risk of climate-related shocks. The social registry currently contains data on households identified as poor. However, it does not fully account for the dynamic risks posed by climate-related shocks, which can push non-poor households into vulnerability. There are indicators of the household's living conditions and the geographical location, which can indicate how at risk a particular household might be. However, to accurately identify individuals who might be climate-vulnerable but not identified as "poor" in the registry, it will be necessary to consider a comprehensive approach to vulnerability assessment including indicators related to different types of hazards.

III. THERE IS LIMITED BUT INCREASING USE OF THE SOCIAL REGISTRY FOR SHOCK-RESPONSIVE SOCIAL PROTECTION PROGRAMMING.

The World Bank's Helping Hand project has been using the MAF's social registry to identify beneficiaries of the conditional cash transfer programme, which currently covers four northern provinces (Phongsaly, Oudomxay, Huaphanh, and Xieng Khuang), 12 districts, and 879 villages, with plans to expand further to 75 districts. In phase 2 of the CCT/Helping Hand programme, the Department of Rural Development (DRD) under MAF is now considering expansion of the programme to climate-exposed areas (initially, the Phase 1 focus has only been to target poor and vulnerable provinces in the north). Using a risk map of five disasters (earthquakes, droughts, floods, storms, etc.) provided by the World Bank, MAF is currently exploring a multi-level geographical targeting of provinces, districts, villages, and households. To achieve this, a new assessment that overlays household exposure maps with the social registry data is being considered to help identify households that are both climate and poverty-vulnerable (using geographical and environmental indicators). Furthermore, Furthermore, MAF, with support from the ADB, plans to integrate adaptive and shock-responsive elements into the social protection system, including strengthening the connections between the social registry and other information systems to enhance responses to climate-related shocks.

The Lao PDR social registry has been instrumental in informing the targeting of anticipatory action. In partnership with the Ministry of Agriculture and Forestry, the Food and Agriculture Organization (FAO) launched a project aimed at enhancing the livelihood resilience of rural communities in Lao. In early 2024, after the Combined Drought Index, which is used for activating anticipatory action, reached the 60 percent threshold for Oudomxay,

Phongsaly, Sayabouly, and Vientiane provinces, FAO decided to ramp up its anticipatory action efforts in Oudomxay. These efforts included disseminating early warning messages to farmers, distributing drought-resistant seeds, and providing a one-time unconditional cash distribution to rainfed and irrigated farmers (FAO, 2024). For anticipatory action interventions, FAO has been working with MAF since the beginning of the project in 2021 and has been able to use information on the household poverty from the social registry for targeting. Similarly, MAF granted WFP access to social registry poverty data to assist with the geographic targeting of their programmes, which proved especially useful during the floods caused by tropical cyclone Yagi in 2024.

Although the registry is being used for social protection programmes to some extent, its use to inform actions across the disaster response spectrum, beyond just targeting, still needs improvement. In the future, once data is shared with ministries like the Department of Planning and International Cooperation/Investment, the Ministry of Labor and Social Welfare (MoLSW), and the National Disaster Management Committee (NDMC), it might be possible to use this data and link it to real-time exposure maps to facilitate geographic targeting for emergency response during disasters such as floods and droughts. Additionally, to ensure public access to this reliable information, climate risk/early warning information can be shared on one of the above data repositories presented in Table 5.

IV. EFFORTS AND COMMITMENTS ARE UNDERWAY FOR A CLIMATE-ADAPTIVE SOCIAL PROTECTION SYSTEM.

The social protection system in Lao PDR has undergone significant improvements in the last decade, with the National Social Protection Strategy (NSPS) 2025 integrating multiple components designed to safeguard the welfare and social security of all citizens. The NSPS seeks to extend social protection coverage to all people from different types of shocks, including natural and man-made disasters by 2030.[56] It recognises the need for emergency assistance and livelihood support for those affected by climate hazards like floods, droughts, cold weather, landslides, etc. It also states that relevant legislation should be developed and revised to provide such services to affected populations. In addition, the government has integrated climate risks and mitigation measures into planning documents, including the Ninth National Socio-Economic Development Plan (2020-2025). This plan recognises the role of social protection in emergencies, particularly the use of public works for disaster management and climate action. Climate and disaster risk considerations have also been embedded in vital sectoral policies and strategies for agriculture, environment, housing, and transport. The Disaster Management Fund Decree, Article 5 on Fund Utilization, prioritises emergency assistance by providing social services, including temporary shelter, warehouse management, regular cash transfers, and subsidies.[57]

The social registry is also being shared with different ministries, and plans are underway to explore how best databases could be made interoperable to enable more accurate targeting for climate risks with the fewest exclusion/inclusion errors. These efforts indicate a strong political will and commitment to strengthening national social protection systems to address climate risks while continuing with their regular functions.

56 ILO (2025). National Social Protection Strategy Lao PDR.

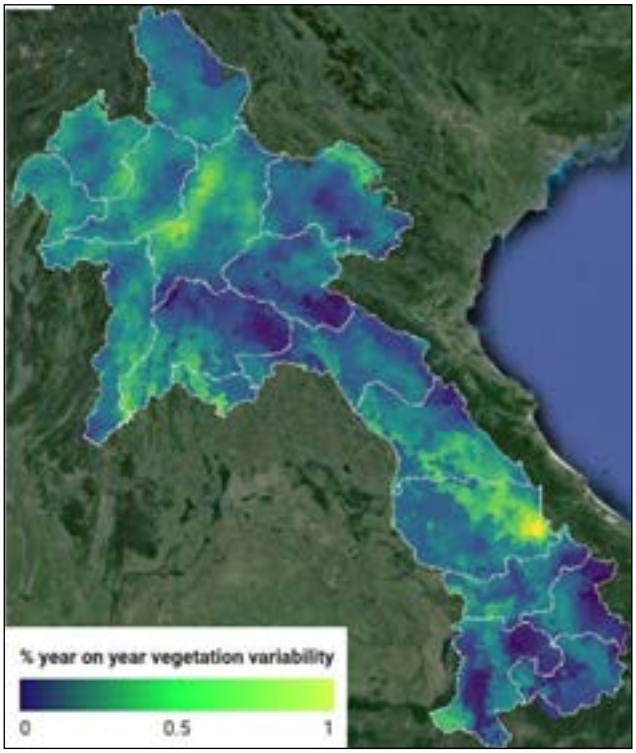
57 MoLSW (2024).

While this level of ambition in different policies, strategies, and programmes indicates a strong commitment towards making social protection systems adaptive to climate change, it remains necessary to come up with an implementation plan/roadmap to effectively operationalise the NSPS 2025, clearly outlining which social protection programmes deliver emergency support before/during/after disasters, which provide livelihood assistance enabling medium to long term adaptation, and which agency leads the implementation.

V. THERE IS LIMITED OVERLAP BETWEEN POPULATIONS AT HIGH RISK OF CLIMATE IMPACTS AND THOSE LIKELY RECEIVING SOCIAL PROTECTION ASSISTANCE.

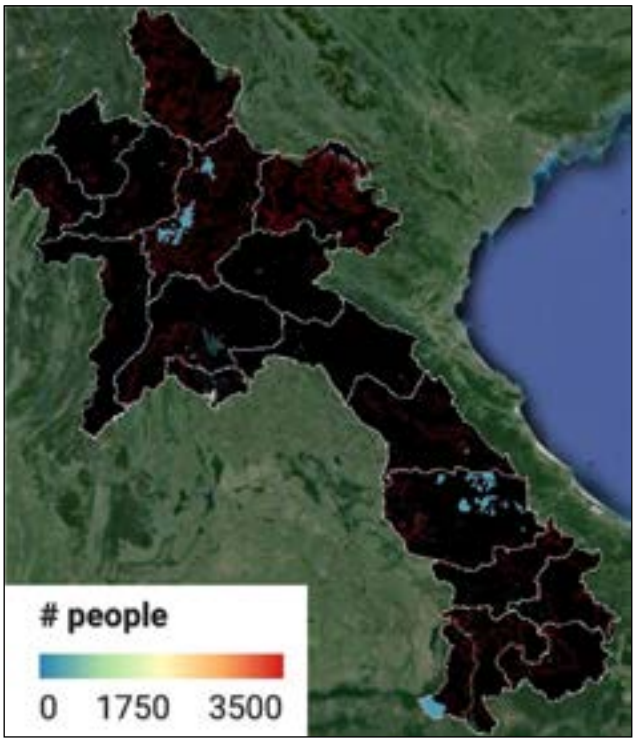
Livelihoods in Lao PDR are diverse owing to a complex topography and the flows of the Mekong River basin. Over 40 unique livelihood groups exist in the country, each with a unique resilience profile (WFP CLEAR 2016). According to the Climate Risk and Vulnerability Analysis conducted by Tetra Tech for this study linked in Annex 5, the households with the greatest exposure to climate hazards in Lao PDR are scattered across several of the country's most populous areas and are not more likely to be poor or agricultural than the overall population. However, households that rely on rainfed agriculture are the most at risk from climate impacts, whether drought in the highland areas or flooding in the lowland areas, likely equating to around 70 percent of the population according to the Lao Statistics Bureau (LSB). Based on our analysis, geographically, climate-sensitive populations are clustered in highland rice paddy areas of Oudomxay and Savannakhet provinces—which face extreme drought and heat—and in lowland rice paddy areas around Vientiane, which face riverine flooding and extreme heat and are less likely to be irrigated than central rice-growing regions (Figure 5).

Figure 5: Climate Exposed Areas



Out of the people living in hazard-prone areas, 14 percent (129,528 individuals) live below the national poverty line. This means that they may be eligible to receive social protection support already, even without considering the impact of climate risk. The national poverty rate is around 25 percent, which indicates that the most climate-exposed areas may not be disproportionately poor. However, an additional 20 percent of individuals (179,174 people) in climate-exposed areas fall above the poverty line but live where the primary source of livelihood is highly vulnerable to climate risk (Figure 6). In a climate shock, these households may fall below the poverty line. It will be beneficial to expand the eligibility criteria for social assistance by including a climate risk index so that households in these areas would likely qualify as potential beneficiaries in the event of a shock. The analysis of village-level multidimensional poverty graduation data from the Government Census has findings similar to those of poverty regarding the incidence and geographic distribution of vulnerable populations.

Figure 6: Village Poverty Graduates Living in Climate-Sensitive Livelihood Zones



3.4. Recommendations Lao People's Democratic Republic

As described in the methodology section, climate risk is the potential adverse outcomes from climate hazards, exposure of assets or people, and vulnerability, constituting sensitivity and adaptive capacity. Considering this definition, we present specific recommendations for integrating data into the social registry. Our recommendations are designed to build upon one another, ultimately aiming to establish a climate risk index that integrates hazard, exposure, and vulnerability at the household level. We present our recommendations sequentially, recognising the time and resources required to achieve this goal.

To begin with, we suggest enhancing the PMT by overlaying climate hazard and exposure data for improved geographic targeting. The second item proposes enriching the HAF by incorporating climate vulnerability indicators, which will serve as valuable complements to the PMT. Moving to the third item, it is recommended that the identification of vulnerable nonpoor households utilise the climate vulnerability data. Lastly, in our fourth item, we propose developing a comprehensive climate risk index at the household level, synthesising the insights garnered from the preceding three proposals. It is important to emphasise that these foundational steps are essential building blocks toward achieving the more ambitious objective.

Strengthening the social protection system in Lao PDR and incorporating climate data into social protection programming requires building on the government's current capacities to meet the country's needs. In light of this, the report also provides practical recommendations for improving system-level change for integrating and utilising climate risk data in social registries. The suggested actions are primarily intended as a starting point for engagement at the country level and should be further developed by national stakeholders.

I. INVEST IN ROBUST CLIMATE HAZARD AND EXPOSURE ANALYSIS FOR GEOGRAPHIC TARGETING.

The analysis of climate hazards and exposure plays a vital role in identifying regions that are most susceptible to historical and current climate threats and the anticipated impacts of climate change. This critical information can be effectively integrated with social registry data to highlight specific areas where low-income households face heightened vulnerabilities to climate risks. By focusing on these high-risk regions, support can be prioritised for the communities most affected by climate change.

Numerous initiatives are underway in Lao to create detailed climate hazard analyses and maps that identify areas with significant climate risks. One such effort is the climate analysis detailed in this report, which lays the groundwork for understanding the geographic distribution of climate hazards. Furthermore, , MAF, with support from the World Bank, is actively pursuing developing a multi-tiered approach to geographic targeting. This strategy operates at various administrative levels—provincial, district, village, and household—ensuring a more tailored response to vulnerabilities. Additionally, the Department of Climate Change within the Ministry of Natural Resources and Environment (MoNRE) has undertaken comprehensive vulnerability assessments, and a new assessment is being carried out to inform the National Adaptation Plan (NAP).

While these initiatives represent a positive and promising starting point, it is important to note that they are being developed in isolation from one another. To maximise effectiveness

and foster a more coordinated approach, it is recommended that the government initiate efforts to standardise and centralise these activities to establish a comprehensive national climate hazard map that can inform geographic targeting of social protection measures to safeguard vulnerable communities.

Developing and managing a platform that combines climate and non-climate data involves numerous components, including software development, data acquisition, hosting, maintenance, updates, support, and training. These elements can have high costs and require substantial government and partner investment. As a starting point, the government could consider strengthening the K4D.La platform as a centralised data platform similar to Nepal's Building Information Platform Against Disaster (BIPAD), which could prove invaluable. K4D.La platform could be further strengthened to consolidate climate risk data from multiple sources, such as the Ministry of Natural Resources and Environment (MoNRE), the Ministry of Agriculture and Forestry (MAF), and international organisations. The K4D.La visual dashboard could display real-time climate information. Linking this dashboard to a social registry, like the Helping Hand beneficiary registry, would help visualise where current social protection beneficiaries reside in disaster-prone zones. This way, one can identify whether existing beneficiaries are at risk or if new individuals need to be targeted.

Furthermore, recent experiences suggest that the credibility of information, especially concerning early warning systems, is diminished due to its origin from multiple unverified sources. To address this issue, making the dashboard accessible to all agencies involved in social protection will facilitate seamless connectivity to automated early warning systems. This will ensure that credible and timely alerts are disseminated across various levels of the disaster management system. Additionally, with real-time insights into imminent hazards, agencies can take anticipatory actions, allowing them to provide support before disaster strikes and make a difference in saving lives and protecting communities.

II. IMPROVE THE INTEGRATION OF CLIMATE VULNERABILITY INDICATORS INTO THE SOCIAL REGISTRY.

The social registry in Lao is built using a household assessment form (HAF) that collects data on household identification and socio-economic conditions. It includes individual and household information, which is processed to assign a PMT score to classify households as poor or non-poor. While this registry is critical to inform targeting of social protection interventions, it lacks crucial climate vulnerability indicators.

A more comprehensive approach to vulnerability assessment incorporating various climate-related indicators is necessary to identify vulnerable individuals effectively. It is recommended that climate vulnerability indicators be incorporated into the HAF to identify households particularly susceptible to climate-related risks. This process will facilitate more effective shock-responsive targeting, allowing for tailored support for those most in need in the face of climate challenges.

Potential indicators could include physical exposure to climate-related hazards, impacts on livelihoods and assets, and households' adaptive capacity and resilience. These indicators should also consider gender disparities and socio-economic vulnerabilities, ensuring that women-headed households, people with disabilities, and ethnic minorities are adequately included. We propose a list of indicators for consideration in Annex 1 as a starting point. However, we recognise that needs, capacities, and preferences for response options differ widely among vulnerable groups and should be systematically assessed to inform targeted interventions. It is recommended that broader consultations be conducted to build on and refine the proposed

climate vulnerability indicators. This process will be crucial for selecting the right indicators and building consensus among all key national stakeholders. Ideally, these consultations should involve relevant ministries to gather their preferences and assess the feasibility of new indicators.

Furthermore, it is recommended indicators be continuously updated to reflect the evolving nature of climate change and its impacts. As climate conditions intensify, new vulnerabilities may emerge, and indicators must be adjusted accordingly. Furthermore, communities' coping mechanisms and adaptive capacities will likely develop as populations gain experience and innovative responses to climate challenges, and the effectiveness and resilience will change. Hence, it is imperative to regularly refine the indicators to capture the dynamics of climate risks accurately.

III. PRE-IDENTIFY "NON-POOR" HOUSEHOLDS VULNERABLE TO CLIMATE-RELATED RISKS FROM THE SOCIAL REGISTRY.

In Laos, the data collected through the HAF is crucial for determining a household's Proxy Means Test (PMT) score. This score categorizes households as poor or non-poor, which is the basis for receiving social assistance benefits. It is important to understand that while social assistance programmes are designed to support those living in poverty, a single climate-related shock can drive even those classified as non-poor below the poverty line. Key informant interviews and workshop participants revealed that, even when comprehensive climate risk maps are developed, like those produced by the Ministry of Natural Resources and Environment, many households residing in high-risk areas continue to go unregistered. This lack of registration prevents them from receiving assistance, leaving them without the resources necessary to cope with the challenges posed by climate change.

To ensure that shock-responsive social protection programmes effectively tackle the challenges posed by climate-related shocks, it is essential to broaden their scope to include vulnerable households that may not be classified as poor. This horizontal expansion is crucial for reaching those at risk and enhancing the effectiveness of these programmes. Additionally, pre-identifying detailed information about climate-vulnerable "non-poor" households in the existing registry can significantly improve the distribution of reliable and timely early warning information.

As part of our strategic recommendations, we suggest that the government establish a comprehensive household climate vulnerability score based on the climate vulnerability indicators proposed in recommendation #2, which will work in conjunction with the Proxy Means Test (PMT). This dual approach will ensure that social protection programmes are better equipped to identify and support those most affected by climate-related challenges, ultimately fostering greater community resilience.

The climate vulnerability scoring system can be simplified into three categories: high, moderate, and minimal. This approach streamlines the process of identifying climate-vulnerable households and easily communicates the results. For instance, households that display multiple indicators of climate vulnerability could be classified as "highly climate vulnerable." Those that show an average number of climate vulnerability indicators can be classified as "moderately climate vulnerable." Finally, households that meet only a few vulnerability indicators can be classified as "minimally climate vulnerable." This innovative dual-scoring system will be vital for identifying households at heightened risk from climate impacts. Additionally, it will help design and implement targeted, shock-responsive social protection strategies to enhance resilience in these at-risk communities.

Furthermore, the MAF social registry, currently updated annually, could adopt a more dynamic updating process similar to Cambodia's IDPoor programme. This would allow "non-poor" individuals affected by a shock and experienced financial losses to request an update of their information and potentially qualify for assistance.

IV. DEVELOP A CLIMATE RISK INDEX AT THE HOUSEHOLD LEVEL.

While the recommendations presented in #1, 2, and 3 are necessary for integrating climate risk into social registries, more is needed to truly understand the climate risks faced by each household. In the long term, the government should consider developing a comprehensive climate risk tool incorporating a multifaceted climate risk index. This index would integrate various climate hazards, levels of exposure, and the vulnerabilities each household faces. It will enable detailed mapping at the household level, ensuring that specific vulnerabilities of households to a particular climate hazard and those facing significant climate risks are identified. The index could also include projected future climate scenarios and be regularly updated to reflect the evolving nature of climate risk. Such a climate risk index will assist the government in assessing each household's resilience. It can improve social protection programmes by proactively prioritising interventions and effectively allocating resources to households with the greatest need.

Implementing the recommendations outlined in points #1, #2, and #3 would be a practical first step to achieving a household-level climate risk index. The government could also consider collaborating with international partners to develop this index by utilising valuable indicators collected by the HAF. Moreover, the government could learn from successful practices implemented in other countries. For example, the Dominican Republic has established a Climate Shock Vulnerability Index that classifies households on a scale from 1 to 10 based on their vulnerability to climate shocks. After a climate crisis, households with lower scores (closer to 1) are prioritised for assistance.

V. ENHANCE GOVERNMENT AND LOCAL STAKEHOLDER CAPACITY TO EFFECTIVELY INTEGRATE CLIMATE INFORMATION IN SOCIAL REGISTRIES FOR SHOCK-RESPONSIVE SOCIAL PROTECTION.

It is recommended that the capacity of various departments responsible for climate change action are strengthened to provide essential data for social protection agencies. For example, the Lao Statistics Bureau requested additional training to enhance staff capacity in developing climate time series, data collection tools, indicators, and GIS. Similarly, the Climate Change Department (CCD) under MoNRE would greatly benefit from increasing its capacity for risk assessments and preparing hazard, vulnerability, and exposure maps.

In addition to strengthening data collection capacity, it is recommended a shared understanding be built across these line ministries (e.g., MoNRE, MAF, MoLSW) on using, interpreting, and applying climate information to enhance decision-making and develop evidence-based social protection interventions. For example, the Lao National Disaster Management Committee underutilises the vulnerability assessment data prepared by the CCD for disaster management. However, leveraging this data could significantly enhance preparedness and response, particularly in social protection programmes. Capacity strengthening initiatives should be expanded to focus on data collection and management and its practical application for programme implementation. Strengthening inter-ministerial collaboration will ensure that collected data is effectively used in the social registry and in targeting vulnerable populations. Additionally, building the capacity to identify which indicators

from the registry can be used to select households at risk of specific hazards is essential. Regular feedback and review mechanisms should also be established among stakeholders to continuously refine the integration of climate data into social protection programmes. Additionally, leveraging existing GIS and data management tools within MAF, MoLSW, MoNRE, and other relevant ministries can facilitate integration.

With capacity-strengthening support from the Climate Risk and Early Warning Systems (CREWS) project and other similar initiatives, the Department of Meteorology and Hydrology is developing a climate risk application for real-time monitoring of meteorological data across 148 districts nationwide. It is recommended that new partnerships be explored to increase the department's capacity to use satellite imagery and open-source platforms, such as GloFAS and Google Flood Hub, to improve the accuracy of climate risk assessments that can strengthen social protection applications. Additionally, it is recommended that the department is offered continued support to enhance the reliability, timeliness, and dissemination of early warning information.

The third pillar of the social protection strategy, which focuses on social welfare, includes short-, medium-, and long-term plans. However, these strategies still need to be fully integrated and implemented, particularly in post-disaster recovery efforts. Improved capacity to synchronise plans across ministries and sectors is necessary to enhance resilience and support.

VI. ENHANCE THE IMPLEMENTATION MECHANISMS OF SOCIAL PROTECTION SYSTEMS TO ADDRESS CLIMATE RISKS.

To tackle the pressing challenges of climate risks and compound crises effectively, it is important to enhance key elements of the social protection system. Laos currently does not have a digital national ID system with a unique identifier, which complicates the integration and coordination of various databases and registries. To address this issue and in accordance with Decree No. 655/PM, which directs the Central and Provincial Social Protection Commissions to oversee the implementation of a national ID system, the country should move to establish a unified national ID system. Such a system would help identify marginalised communities, streamline responses during climate-related emergencies, and speed up access to essential benefits and services. Laos can look to Indonesia's[58] unified database for guidance with their own national ID systems. By expanding Laos's social registry and making it compatible with other databases, the country can develop a comprehensive plan for an integrated identification system to better respond to climate challenges. Additionally, improvements to Laos's social registry and efforts to make it work with other databases show progress toward a single registry. This new system would allow verification and eligibility checks through national ID numbers, reducing duplication. To implement this, Laos can seek support from development partners to explore the necessary technical requirements.

Another foundational social protection system is the delivery mechanisms. Only about 5 percent of beneficiaries under the Helping Hand programme receive electronic payments (through e-wallets, bank accounts, and mobile numbers), while 95 percent receive cash in hand. However, delivering cash in hand may not be feasible during extreme events. On the other hand, many individuals in disaster-prone regions lack bank accounts and mobile banking options, limiting their access to digital cash transfer systems. Additionally, disparities in access to financial services are worse for women and individuals with disabilities.

Recognising the layers of challenges, it is recommended that the government pursue a flexible assistance system that combines

58 In Indonesia, the social protection database is linked and integrated with the national ID database to streamline verification and validation processes. (Palaon (2024). "Digitising the social safety net: Lessons from Indonesia").

traditional cash deliveries with the gradual introduction of digital wallets across Laos. Increasing digital literacy and awareness in communities through a nationwide digital campaign can promote the acceptance of mobile money and inspire a shift in social behaviour. Evidence from countries like India, Pakistan, and Bangladesh shows that digital technologies can improve social safety net programmes' identification, verification, and payment processes.[59] Digital financial services also have the potential to empower women, giving them greater control over their finances and improving their financial literacy through user-friendly tools. Similarly, inclusive services designed with features like voice commands and screen readers can enhance financial independence for people with disabilities.

To facilitate the digital transition, it is recommended that the government collaborate with local financial institutions, ensuring that accessible and inclusive options are available to everyone. Establishing partnerships with private sector companies and mobile service providers could also further expand the digital payment infrastructure, offering affordable and tailored financial services to the most disadvantaged populations, particularly women-headed households and those with disabilities.

VII. MAINSTREAM THE USE OF SOCIAL REGISTRY DATA FOR TARGETING BENEFICIARIES OF SOVEREIGN INSURANCE PAYOUTS

Lao PDR is making significant strides in the development of a comprehensive disaster risk finance mechanism that employs a risk-layered approach. In May 2019, the country joined the Southeast Asia Disaster Risk Insurance Facility (SEADRIF), a collaborative initiative aimed at providing innovative financial solutions for the ASEAN region to mitigate the effects of climate shocks and natural calamities. In 2024, SEADRIF provided a payout of US$3 million triggered by the devastation caused by Typhoon Yagi which resulted in extensive flooding across Lao PDR. The funds were directed towards emergency relief, repairing essential services infrastructure, and restoration of essential services.

It is recommended that the government explores a more systematic use of some of the funds for social assistance beyond emergency response, as this could have far-reaching long-term consequences. As recommended above, incorporating climate data into social registries could significantly facilitate the identification of climate-vulnerable poor and non-poor individuals and households, thereby ensuring that SEADRIF payouts are effectively transferred to those most in need in the wake of a climate-related event. By integrating climate and disaster risk financing with social protection systems, the government can prioritise the needs of the most vulnerable and provide timely resources for a quicker response and more predictable assistance. This integration can improve the identification of those in need, enable faster distribution of resources and services through established delivery mechanisms, and achieve overall cost-effectiveness and efficiency in meeting post-disaster needs through financial resilience in the wake of disasters. Important lessons can be drawn from similar initiatives implemented in the Caribbean.[60]

VIII. ADOPT A MULTI-LEVEL, MULTI-SECTORAL COORDINATION.

Lao PDR's social protection sector relies heavily on international actors and development partners for its development and implementation. The involvement of organisations such as ILO, UNICEF, WHO, UNFPA, WFP, UNDP, ADB and the World Bank has contributed to improving the governance and operational aspects of the social protection sector. However, challenges such as inter-agency

59 Bird, N., & Hanedar, E. (2023). Expanding and Improving Social Safety Nets Through Digitalization. International Monetary Fund.

60 World Food Programme (2024). Linking Disaster Risk Finance to Social Protection in the Caribbean.

coordination and limited fiscal capacity persist. To address these challenges, it is recommended that the Government and its development partners build on existing systems, work together across levels and sectors, and avoid siloed approaches. Leveraging existing national coordination mechanisms such as the National Disaster Management Committee, the National Social Protection Commission, and the planned Social Protection Sector Working Group could foster collaboration and information-sharing among key stakeholders. Below are some suggested immediate actions for consideration.

- In 2025, WFP plans to roll out a shock-responsive social protection programme in highly vulnerable provinces in cooperation with MoLSW. WFP could proactively consult with other actors, such as MAF, ADB and the World Bank, to avoid potential overlaps and identify good practices. In addition to using the social registry data under MAF for targeting, WFP could also explore whether the existing API and payment provider contract that Helping Hand currently uses could also be leveraged for the WFP SRSP Pilot project. Developing shared objectives and performance indicators will help align efforts and measure the effectiveness of coordinated initiatives and its impact on national policies and strategies.
- To address inclusion and exclusion errors, it is important to update the information in the registry regularly. One effective approach is to establish a two-way feedback loop when the registry data is used for targeting interventions. In line with data-sharing agreements, protocols, and beneficiary consent, it is recommended that data collected from the registry and used by agencies for programme targeting be returned. This process will help enhance the accuracy and effectiveness of the registry.
- As there is no clear framework for coordination during disasters between ministries and external agencies and between national and sub-national levels, a comprehensive communication plan for multi-hazards with precise communication flows and points of contact between social protection actors and NDMC can be developed.
- Existing communication mechanisms to communicate with beneficiaries of social protection programmes can be used to deliver early warning messages before/during climate shocks by the DMH. The format of early warning messages should be easy, user-friendly, and clearly state the impacts and measures that can be taken. The DMH could work together with the National Disaster Management Committee and the Ministry of Labor and Social Welfare, as well as local social protection implementing authorities to co-produce effective early warning messages, following WMO guidelines.

4. Case Study: Sri Lanka

4.1. Contextualizing Climate Risk

Nineteen million Sri Lankans are projected to live in locations set to become moderate or severe climate hotspots by 2050.[61] In Sri Lanka, flood hazards are common across the country's lowland areas. Drought hazards are closely related to the timing and variability of the rainfall received during the four-monsoon season (First Inter-monsoon during Mar-Apr, Southwest monsoon during May-Sep, Second inter-monsoon during Oct-Nov, and Northeast monsoon season during Dec-Feb) over the three major climate zones (wet, intermediate and dry) in the two agriculture seasons, Maha and Yala season, spanning from November to February and May to September respectively. Regional disparities (climate zones) dictate which season farmers depend on for their livelihoods. Farmers rely on Second Inter-monsoon and North-east monsoon rainfall for the Maha season (November to February), is ideal for cultivating rain-fed rice paddies. Conversely, the farmers in southern, central and western regions depend predominantly on South-west monsoon for rice cultivation. Further, farmers producing fruit, vegetables, and cash crops, tend to be more prone to drought. Heat stress affects the entire country, with less exposure in highland areas.[62]

According to the World Bank Hazard Inventory, floods are the most common type of natural hazard in Sri Lanka, with 37 recorded events from 1981 to 2020. This is followed by nine recorded drought events and eight storm events. Analysis of more flood-focused disaster inventories (EM-DAT and Dartmouth Flood Observatory) finds that riverine floods caused by monsoonal rains are the most common type of flood event and affect the most people. However, storm-related flood events and flash flood events due to blockage of drainages/canals caused the most recorded monetary damages.

According to the CMIP6[63] Shared Socioeconomic Pathway 8.5 scenario (SSP85) projections of climate change by 2040, the southwest is the wettest region and is likely to get wetter during both of Sri Lanka's monsoon seasons. In contrast, the intermediate and dry climate zones get less rain and may get drier in the future. All parts of the country are uniformly projected to get significantly hotter. To put these projections in context, 1982-2022 observations show a general upward trend in rainfall, especially in the south. There has also been an apparent increase in inter-annual rainfall variability in recent years.

The Climate Vulnerability Analysis (CVA) Technical Report linked in Annex 5 presents the full climate analysis for Sri Lanka.

61 UNSL (2022).

62 Naveendrakumar, et. al. (2016). 'Temperature trends in Sri Lanka'. University of Peradeniya, Sri Lanka.

63 CMIP6 stands for the Coupled Model Intercomparison Project Phase 6, a global initiative under the World Climate Research Programme that coordinates climate model experiments. It involves multiple climate modeling groups worldwide that perform standardized experiments and share their data. The findings from CMIP6 are essential for climate research and significantly contribute to IPCC Assessment Reports that guide global climate policy. https://wcrp-cmip.org/cmip6/

4.2. Overview of Sri Lanka's Social Protection System

Sri Lanka's social protection system is crucial to the country's efforts to alleviate poverty, reduce inequality, and promote social welfare. According to UNICEF, in 2020, the government allocated approximately 2.6 percent of its GDP to social protection programmes. This expenditure comprised about 0.63 percent for social assistance initiatives, such as support for low-income families and vulnerable groups, and 1.97 percent for social insurance schemes, primarily public pensions.

The government spent an estimated LKR 389.029 billion (USD 1.336 billion) on social protection schemes.[64] A majority of these investments (about 75 percent) are made for social insurance, such as public pensions and soldiers' death and disability compensation. However, social health protection is not included in this figure. Despite this, 100 percent of the Sri Lankan population is affiliated with at least one social health protection scheme. Compared to the Southern Asian regional average spending 3.8 percent of GDP on social protection (excluding healthcare), Sri Lanka's total expenditure on social protection falls a bit below average. The programmes, however, cover 41.3 percent of the total population and support programmes such as: work injury, old age allowances and pensions, and maternity and child benefits.[65]

4.2.1. INSTITUTIONAL ARRANGEMENTS

The Ministry of Finance, Planning and Economic Development leads the implementation of the recently launched National Social Protection Policy (NSPP). The National Social Protection Policy (NSPP), officially launched in 2024, aims to establish a unified approach to social protection by integrating various programmes and services targeting vulnerable populations, including the poor, elderly, persons with disabilities, children, and women. While the Policy sets the framework, the specific mechanisms for integration will be detailed in the accompanying Strategy. The NSPP is designed to address the needs of all citizens throughout their lifecycle, ensuring support when needed most. It provides guidance for a coordinated approach among government, private sectors, and NGOs, addressing current system weaknesses and establishing a framework for planning, budgeting, and implementation of social protection activities. The Welfare Benefits Board (WBB) oversees welfare programmes that provide financial assistance to vulnerable populations. Its key functions include developing guidelines in line with national social protection policy, administering and monitoring programmes, and coordinating with other agencies to improve service delivery. The Aswesuma scheme is of the main national welfare benefit programmes that the board oversees. Meanwhile, the Ministry of Rural Development, Social Security and Community Empowerment houses important divisions responsible for other social protection programming in the country, including the Departments of Social Services and the Department of Samurdhi Development.

4.2.2. KEY SOCIAL PROTECTION PROGRAMMES

The Samurdhi Programme, launched by the Sri Lankan government in 1995, aimed at poverty alleviation and became a key component of Sri Lanka's social protection system. By the late 1990s, it expanded nationwide, focusing on equitable resource distribution to households based on need.[66] The programme utilised a three-part approach: social safety nets and subsidies, rural development, and income generation.[67] As

64 Bird, Nicolò, et. al (2022). Public expenditure analysis for social protection in Sri Lanka.

65 ILO (2024).

66 Center for Public Impact (2017), and the Center for Policy Analysis (2005).

67 Department of the Commissioner General of Samurdhi (DGCS).

of 2022, it supported 1.76 million families through various components, including food stamps and community development initiatives.[68] However, the programme faced challenges, with only 38 percent of low-income households receiving benefits by 2019, and inadequate transfer levels compared to similar countries.[69] In response, the Sri Lankan government introduced a new social assistance scheme, the Aswesuma Welfare Benefit Payment Scheme in 2023.

The Aswesuma programme marks a major change in Sri Lanka's cash transfer system, although there are concerns about the selection criteria that have excluded some former beneficiaries of the Samurdhi programme. The WBB has integrated various older social assistance programmes into the Aswesuma framework. Consequently, the Samurdhi cash transfer programme has been gradually phased out. Since its restructuring in mid-2023, the Department of Samurdhi Development (DSD) has been mandated through a cabinet paper to focus on empowering the livelihoods of Aswesuma beneficiaries.[70] In addition, other programmes providing categorical benefits such as the Allowance for the Elderly, Allowance for Chronic Kidney Disease Patients, and Allowance for the Disabled continue to be implemented under the Welfare Benefits Act.

The Aswesuma scheme introduced a new, more objective system for identifying beneficiaries using a quantified multidimensional deprivation score. It aimed to expand its coverage to 2.4 million beneficiaries annually, exceeding the 1.76 million supported by Samurdhi in 2022, including about 70 percent of the previous Samurdhi beneficiaries.[71] Changes in targeting has also ensured that nearly 950,000 new families who previously did not receive government assistance were eligible. Beneficiaries are divided into three categories—transitional/vulnerable, poor, and extremely poor—with different levels of support, and some categories, like transitional / vulnerable, receive temporary assistance.[72] Benefits are disbursed directly into beneficiaries' bank accounts, regulated by the Welfare Benefit Board reducing third-party involvement. The new scheme has faced criticism in terms of excluding previously targeted beneficiaries of the Samurdhi programme, but the government is committed to ensuring that all deserving individuals receive assistance having conducted a second round of enrollments in July 2024.[73]

Alongside the flagship Aswesuma programme, several other social protection programmes have been implemented in Sri Lanka. They are aligned in the fields of social services, health and nutrition, education, and agriculture (Table 4). The objective of each scheme is to ensure a better living condition for low-income families. While there are limited examples of using the current social protection programmes for climate-related disasters in Sri Lanka, the National Natural Disaster Insurance Scheme is worth highlighting. Inaugurated in 2016, it represents a state-funded insurance framework designed to support individuals impacted by natural calamities. Implemented in partnership with the National Disaster Relief Services Center, the government allocated LKR 15 billion (approximately USD 51.525 million), to cover uninsured citizens and properties in 2018.[74] The programme has since been discontinued due to a lack of funding after two consecutive disasters hit the island in 2016 and 2017.

68 Bird et al., (2022).
69 CEPA (2023).
70 WFP CO Sri Lanka KII (2024).
71 Hirunews (2023).
72 MoF (2024, b).
73 Ministry of Finance, Economic Stabilization and National Policies, Welfare Benefits Board (2024).
74 Plevin et al. (2020). Review of the National Natural Disaster Insurance Scheme in Sri Lanka. World Bank.

Table 4. Main Social Protection Programmes in Sri Lanka in 2020[75]

Category	Programmes Included	Beneficiaries	Annual Budget (LKR m)
Nutrition	National School Meals Programme, Thriposha Programme, Fresh Milk for School Children, Nutritional Package for Pregnant Women, Morning Meal for Preschool Children	2,885,590	10,259
Social Insurance (Health)	Suraksha Health Insurance Scheme, Agrahara Medical Insurance Scheme	5,699,915	6,919
Social Insurance (Public Sector)	Widow/ers and Orphans Pension Scheme, Public Servants Provident Fund, Migrant Worker's Insurance Scheme	149,409	51,156
Social Insurance (Private Sector)	Employee Trust Fund, Employee Provident Fund, TEWA Programme	2,797,747	130,592
Social Insurance (Informal)	Farmers Insurance and Social Security Benefit Scheme, Contributory Surakuma Pension Scheme, Fisherman's Insurance and Social Security Benefit Scheme	202,555	4,949
Social Assistance	Samhurdi Subsidy Programme, Public Assistance Monthly Allowance, Senior Citizen Allowance, Public Servants Pension Scheme, Foreces Pension Scheme, Disability Allowance, Kidney Disease Allowance, President's Fund Medical Assistance	3,487,683	247,782

4.2.3. DATA AND INFORMATION SYSTEMS

The Department of Samurdhi Development (DSD) implemented the Samurdhi Information Management System, also known as Samurdhi Customer Relationship Management (CRM), to manage beneficiary records during the Samurdhi Programme. The WBB, with support from the World Bank, has developed the Integrated Welfare Benefits Management System (IWMS). This system enables the creation of a single registry for citizens, starting with beneficiaries of the Aswesuma programme. The IWMS contains information on individuals and households eligible for welfare benefits, including demographic and socioeconomic data. Additionally, the IWMS facilitates the coordination of government cash transfers directly to beneficiaries' bank accounts. Since 2023, the WBB has been collecting countrywide data to identify eligible Aswesuma beneficiaries.

The WBB assesses eligibility using a multidimensional approach involving evaluating six dimensions, including education, health, economic level, assets, housing condition, and family demography. While the IWMS system includes provisions for secure access, further improvements are needed to strengthen data

75 World Food Programme (2020). Social protection in Sri Lanka: An overview of main social protection programmes.

privacy and protection measures following the Personal Data Protection Act No. 9 of 2022 (PDPA) in Sri Lanka which is to be legally enforced w.e.f. 18 March 2024.

4.3. Integration of Climate Risk in Social Protection Systems – Key Findings

I. AN EVOLVING SOCIAL PROTECTION LANDSCAPE PROVIDES OPPORTUNITIES FOR ENHANCING RESPONSES TO SHOCKS.

The National Social Protection Policy (NSPP) policy focuses on equity, sustainability and on increasing people's resilience to economic crises and poverty (MoF, 2024); in addition to recognising that many people are at risk of falling into poverty due to climate shocks (Department of Treasury, MoF, n.d.). As climate change results in economic losses and deepening poverty, it can be expected that the upcoming National Social Protection Strategy, which will serve as a roadmap for the country, explicitly mentions social protection instruments to address different climate shocks. The NSPP also prioritises extending coverage, strengthening delivery mechanisms, and improving coordination – all of which are crucial in strengthening core social protection systems and making them shock-responsive.

The transition from the Samurdhi programme to the newly introduced Aswesuma initiative marked a significant evolution in Sri Lanka's approach to social protection. These changes, particularly in beneficiary identification, coverage, targeting, and delivery mechanisms, can enhance the country's ability to respond to climate risks through more efficient and scalable social protection system. One of the significant advancements under the Aswesuma initiative is the adoption of a multidimensional approach to assessment of deprivations, which utilises six dimensions evaluated through 22 indicators to determine eligibility. However, it appears that climate risk is not yet incorporated among these dimensions. This presents a valuable opportunity to explore the potential integration of climate vulnerability indicators into the multidimensional deprivation scoring index.

The introduction of direct transfers to beneficiaries' bank accounts under Aswesuma is another key development that supports a more shock-responsive social protection system, as transfers made digitally can withstand disruptions during floods or cyclones. The ability to quickly transfer financial assistance directly to affected individuals can significantly mitigate the impact of shocks.

II. SILOED DATABASES MEAN LIMITED INTEGRATION OF CLIMATE RISK DATA INTO CURRENT SOCIAL PROTECTION PROGRAMMING.

Updated databases and integrated data management systems are critical for social protection programmes to be responsive to climate risks, as they offer accurate information on beneficiaries and allow for swift targeting. In Sri Lanka, different programmes currently use different databases without a unified registry system (Table 5). The NSPP recognises the limited utilisation of consolidated digital and data management systems in the absence of a lead agency and coordination mechanisms (Department of Treasury, MoF, n.d.)

An initial nationwide survey was carried out in 1995 to identify beneficiary families for the Samurdhi programme, which was subsequently

updated by Samurdhi animators or mobilizers (called Samurdhi niyamakas) through surveys to identify target groups of 45-50 households in their areas. This local-level data collection contributed to the programme's database but did not include any information that could indicate the climate vulnerability of the people being targeted because climate vulnerability is not considered as a criterion for Samurdhi programme. The Aswesuma programme uses a new Integrated Welfare Management System (IWMS), which stores data collected from both online and physical application processes, including family information, asset information, income, demographic details, and education. These criteria are based on multidimensional deprivation indicators developed by the Department of Census and Statistics (DCS) for the 2019 Household Income and Expenditure Survey. Programmes like the Elderly Allowance programme (also known as the Senior Citizens' Allowance) and the Disability Allowance programme in Sri Lanka, which once maintained separate beneficiary lists, have now been integrated into the Aswesuma programme. This new structure allows all programmes to use the information from the Integrated Welfare Management System (IWMS) to identify and target their respective beneficiaries more effectively. The expanded coverage of the programme also strengthens its ability to support a larger portion of the population during climate shocks, when unforeseen crises could exacerbate the vulnerabilities of previously overlooked populations.

When the National Natural Disaster Insurance Scheme was operational, different agencies like the National Council on Disaster Management, the Disaster Management Center, the National Building Research Organization, the National Disaster Relief Service Center (NDRSC), etc., coordinated to compensate the victims for loss of life and property damage. The assessment of losses was conducted by the NDRSC and village representatives (Grama Niladari), and compensation for the claims was paid directly to the bank accounts upon verification through the identification of national identity card number, claim form, and proof of ownership of property (Liyanage et al., 2022).

None of the operational programmes include climate vulnerability indicators or any other form of climate risk information that can enable shock-responsive social protection in the country. Some of these programmes, however, have geographical information (location and GPS coordinates) which can be overlayed with climate risk maps to identify potential beneficiaries who might be at risk from various climate shocks.

Table 5. Sri Lanka Socio-Economic Indicator Data Examples

Source	Relevant Variables	Most Recent Year
Sri Lanka Socioeconomic Indicator Data		
Household Income and Expenditure Survey (DCS)	Monetary and multidimensional poverty headcount; multidimensional poverty index; social protection coverage	2019
DCS, WBB	Multidimensional deprivation score	2023
Crop and Food Security Assessment Mission (FAO/WFP/MoA)	Food security; agriculture production; coping strategies (food and livelihood); income expenditure; food consumptions	2023-24
Child Nutrition Survey (WFP)	Stunting, wasting, and underweight rates	2022
National Nutrition Month Data (Family Health Bureau)	Stunting, wasting and underweight rates	2024
National Citizen Survey (NCS) 2022-23 (UNDP)	Samurdhi coverage, multidimensional vulnerability Index	2022
CLEAR survey (WFP)	Livelihood zones	2015
Government Samurdhi social registry (DSD)	Samurdhi registered beneficiary count data	2021
Household Food Security Surveys (WFP)	Food security; coping strategies (food and livelihood); income expenditure; food consumptions	2022
Demographic and Health Survey (USAID)	Household asset index and Mulnutrition outcomes	2016
Landslide Hazard Maps (NBRO)	Landslide risk assessment maps	n/a
Department of Irrigation Risk and	Risk and Vulnerability Analysis for 10 River Basin	n/a
DMC climate risk and vulnerability analysis	Climate Risk and Vulnerability Demographic Data	n/a

III. SOCIAL PROTECTION, DISASTER RISK MANAGEMENT, AND CLIMATE CHANGE ARE SEEN AS SEPARATE SECTORS YET HAVE OPPORTUNITIES FOR COORDINATION.

Social protection programmes in Sri Lanka, such as Aswasuma and Samurdhi, were originally created to combat poverty and provide welfare benefits. At the same time, disaster risk management emerged independently to address the impacts of natural hazards and emergencies. While the social protection sector targets vulnerable populations including the poor, elderly, persons with disabilities, children, and women, and is managed by ministries focused on social welfare, the disaster risk management sector has evolved to cater to disaster preparedness, response, and recovery efforts targeting disaster victims and at-risk communities. It is overseen and managed by dedicated disaster management authorities like the National Council on Disaster Management, the Disaster Management Center, the Disaster Management Division under the Ministry of Defense, the National Disaster Relief Services Center (NDRSC), the National

Building Research Organization (NBRO) and Meteorological Department. While the DMC compiles and oversees the disaster management plan submitted by all ministries, including the WBB, these two sectors have been traditionally seen as separate and operate in silos with much more room for collaboration. Beyond individual champions, there is currently no integration at the policy level encouraging collaborative efforts amongst the ministries governing these sectors.

Within each sector, certain technical capacity constraints and coordination challenges exist that inhibit cross-sectoral coordination. For example, the Samurdhi programme database is not digitalised, and concerns have been raised regarding the high inclusion and exclusion errors in targeting. The WBB, managing the Aswesuma programme, has so far been restrictive in data sharing unless an MoU is signed to ensure data privacy and beneficiary confidentiality.

Another source of coordination challenge arises from the renewed mandates between the Aswesuma and Samurdhi programmes. At its inception, the Samurdhi programme had two key objectives. The first was to provide cash assistance to the poor and vulnerable through a nationwide Samurdhi banking network. The second was to promote livelihood development among low-income populations. Aswesuma now handles the cash assistance function while Samurdhi continues promoting livelihood development. However, this shift in mandate and authority over cash transfers has created a division between the two programmes and their respective implementing agencies.

On the disaster management side, the Disaster Management Centre (DMC) established under the National Disaster Management Act in 2005, oversees disaster management policy, coordination, and monitoring across various government agencies. Whereas the Disaster Management Division (DMD) of the Ministry of Defense plays a key role at the policy level, supporting DMC, NBRO, NDRSC, and MET for implementation. The DMD oversees the National Disaster Management Coordinating Committee (NDMCC), which reports directly to the National Council for Disaster Management. The National Council for Disaster Management, chaired by the President of Sri Lanka, serves as the primary coordinating body, bringing together decision-makers and declaring national disasters. There is a need for increased awareness among the different disaster management agencies to explore potential links to social protection.

The disaster management sector has many clear opportunities for cross-sectoral collaboration. To improve targeting, the DMC's comprehensive cloud database could benefit from more granular social data, such as detailed statistics on where women, children, and the elderly as well as people with disabilities are located and knowing more about the manifestation of certain disability types. Additionally, impact-based forecasting could improve predictions on how specific populations, like schoolchildren or pregnant women, could be disproportionately affected by disasters, and is something the DMD is interested in exploring with the World Bank. Enhancing collaboration with the National Disaster Relief Service Center (NDRSC) and improving data collection and management practices between the district and divisional levels can foster more consistent reporting and strengthen early warning systems.

While the focus has predominantly been on disaster management in Sri Lanka, there is a gradual recognition of the importance of understanding the distinction between disaster impacts and climate change related impacts. Recently, it has become clear that climate change is resulting in more extreme events, pushing more people into poverty and resulting in newer vulnerable groups in Sri Lanka.[76] Integrating social protection into disaster risk management, as well as integrating climate risk indicators into social protection registries, allows for a more holistic

76 World Bank. (2023). "Counting People Exposed to, Vulnerable to, or at High Risk From Climate Shocks."

approach to managing various types of risks faced by vulnerable populations. As the disaster management and social protection sectors work through their technical and financial capacity constraints and improve their implementation processes, it might be opportune to coordinate on climate change. Recognising the need for better integration of climate considerations and long-term climate change projections and risk trends into disaster management, the DMD has been working on understanding climate change impacts and how they exacerbate disasters, so could be a good starting point.

IV. OVERLAP BETWEEN POPULATIONS MOST EXPOSED TO CLIMATE RISK AND THOSE LIKELY BENEFITING FROM SOCIAL PROTECTION PROGRAMMES COULD BE IMPROVED.

According to the Climate Vulnerability Analysis (CVA) conducted for this study,[77] climate-exposed households are clustered in northern and north-central provinces, where droughts, floods, and landslides threaten main livelihoods, like rain-fed rice paddy agriculture. Additionally, in the southeastern Uva Province, extreme heat and drought impact main livelihoods like rice farms and tea plantations during Sri Lanka's monsoon seasons. While not directly a climate hazard, landslides may compound risk in the Uva province.

In Sri Lanka, we estimate, through the CVA, that 7 percent of the national population (369,644 households) reside in regions highly susceptible to climate-related hazards. Of those living in hazard-prone areas, 11 percent (43,128 households) fall below the national poverty threshold, and likely are eligible for social protection already without considering climate risk. Notably, according to the 2019 HIES, the national poverty rate stands at approximately 14.3 percent, indicating the disproportionate concentration of poverty and climate-exposed areas. Furthermore, an additional 17 percent of exposed households (64,747 families) within the climate-vulnerable areas surpass the poverty line yet rely on livelihoods that are highly susceptible to climate change, such as farming, fisheries, and tourism (Figure 7).

The households, situated above the poverty line yet relying on climate sensitive livelihoods, are potentially vulnerable and in need for inclusion in social protection programmes, particularly if eligibility criteria incorporate a climate risk index. Analyses of FAO/WFP food security and nutrition data are largely similar to that of poverty in terms of the incidence and geographic distribution of vulnerable populations. By contrast, estimates of Samurdhi participation from the UNDP Multidimensional Vulnerability Index 2022 survey suggest a large share (34 percent) of the exposed population already receive Samurdhi so potential expansion would be relatively small if climate vulnerability criteria were incorporated into the social protection programme (+10 percent of exposed) through a time-bound climate triggered incorporation.

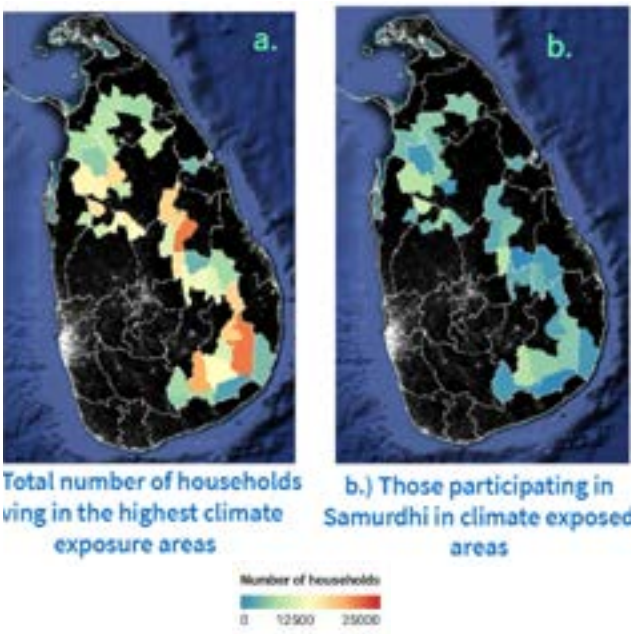


Figure 7. Vulnerability Analysis Using 2022 Samurdhi Sample Data

77 For the purposes of this study, Tetra Tech analyzed climate risks in Sri Lanka. The findings presented within this report are based on a comprehensive Climate Vulnerability Analysis referenced in Annex 5 focuses on building a climate risk methodology, specifically looking at socioeconomic indicators like poverty rates. However, a more comprehensive assessment may be conducted as more data becomes available.

4.4. Recommendations Sri Lanka

The escalating impact of climate change in Sri Lanka underscores the urgent need to strengthen the nation's social protection system against climate-induced risks. Recognising the specific challenges identified—such as fragmented disaster preparedness and response, data limitations, and targeting errors—this section of the report outlines a series of strategic recommendations tailored to Sri Lanka's context. By prioritising the enhancement of policy frameworks, improving data integration, and strengthening institutional capacities and establishment of coordination especially between social protection and disaster risk management, the recommendations suggest strategies to transform the existing social protection system into one that is more adaptive and resilient to climate shocks. The proposed interventions offer solutions to ensure that assistance effectively reaches those most vulnerable to climate-related hazards.

The recommendations outlined in points 1 through 4 are designed to build upon each other, progressively guiding the system toward comprehensively integrating climate data into the existing registry. The first step involves implementing geographic targeting by focusing intervention efforts on specific areas identified through hazard and exposure maps while aligning with current eligibility criteria. Next, a vulnerability scoring system could be developed, incorporating additional indicators (see Annex 1) beyond those in the multidimensional deprivation score to accurately identify households most in need of assistance. It is also essential to recognise the vulnerabilities faced by non-poor households during climate-related incidents, allowing for their identification in advance through the registry to enhance the social protection system's shock-response capabilities. Finally, comprehensive data on hazards, exposure, and vulnerability for each household should be compiled to create a high-resolution household-level Climate Risk Index (CRI), which will inform targeted assistance based on the unique vulnerabilities of each household. The detailed recommendations are presented below.

I. INVEST IN ROBUST CLIMATE HAZARD AND EXPOSURE ANALYSIS FOR GEOGRAPHIC TARGETING.

Key informants have highlighted a growing interest in the Government of Sri Lanka's initiative to integrate climate risk information into its social protection programming, particularly in the framework of the Aswesuma programme. To enhance this integration, it is recommended that a comprehensive climate hazard and exposure analysis be employed, akin to the robust methodology developed by Tetra Tech for this project. This analysis will play a crucial role in pinpointing regions that are especially vulnerable to climate-related disasters. By gaining insights into specific location-based risks and assessing the resilience capacities of households, the support offered through Aswesuma and other social assistance programmes can be finely tuned to address the diverse needs of the population. This ensures assistance is not only timely but also appropriately tailored to effectively respond during climate-induced shocks. Implementing a robust climate-risk-based geographic targeting approach can significantly amplify the impact of social protection mechanisms in Sri Lanka. It allows for proactive planning, the activation of early warning systems, and the strategic allocation of resources. These actions will ultimately shorten response times and mitigate the long-term effects on communities adversely impacted by climate events.

As an initial step, the government could compile existing climate hazard mapping initiatives conducted by various agencies, including the model utilized by Tetra Tech for this project as well as efforts by the Disaster Management Center (DMC) and the Census and Statistics Department to use census data to map climate risks and poverty. The outcome of this effort should be a

set of recommendations aimed at standardizing future analyses, ensuring that the results can be easily compared across different contexts. In line with this effort, it is recommended that the WBB's capacity be enhanced to utilize the collected data effectively to identify and quantify the number of beneficiaries residing in areas at high risk of climate impacts. This capability would greatly facilitate targeted geographic interventions, ensuring that aid reaches those most in need promptly.

II. INTEGRATE CLIMATE VULNERABILITY INDICATORS IN THE MULTIDIMENSIONAL DEPRIVATION SCORE.

Although the Aswesuma programme has made progress in identifying eligible households using a multidimensional deprivation score, in contrast to Samurdhi's method of relying on self-reported household income, there is still a significant gap. This gap exists because the programme does not consider factors related to climate vulnerability. To address this shortcoming, it is recommended that the government consider incorporating climate vulnerability indicators into the existing multidimensional deprivation score. These indicators should encompass critical areas such as physical exposure to climate-related risks, the adverse impacts on households, and households' adaptive capacities to face such challenges. A comprehensive list of potential indicators can be found in Annex 1; however, it is essential to recognize that the specific needs, capacities, and vulnerabilities of different communities can vary considerably. To ensure the effectiveness and relevance of these indicators, it is recommended that the government initiate a series of consultations with all relevant ministries. These discussions would focus on reviewing globally recognized indicators tailored to various climate hazards, adapting them to better fit the unique Sri Lankan context, and building consensus on integrating them into future revisions of the Aswesuma indicators. Additionally, it's important to explore how to use these climate vulnerability indicators in combination with the depriation score for better targeting.

Furthermore, while the current set of 22 indicators is infrequently updated, it's crucial to acknowledge that climate indicators are inherently dynamic, reflecting the ever-changing nature of climate risks. Therefore, it is suggested that the WBB include specific questions in the beneficiary assessment forms to inquire about climate risks and impacts encountered by individuals and households over the preceding calendar year. Additionally, the Department of National Planning could assume a leading role in overseeing the necessary updates and revisions to the multidimensional deprivation scores. Finally, the Department of Census and Statistics can contribute by proposing initial guidance on climate vulnerability indicators, further enhancing the programme's effectiveness in addressing the complexities of poverty in a changing climate.

III. IDENTIFY AND REGISTER CLIMATE-VULNERABLE "NEAR POOR" HOUSEHOLDS.

Aswesuma's multidimensional deprivation score utilizes a comprehensive set of 22 indicators, each assigned specific weights that reflect their relative importance in assessing overall well-being. Using the deprivation scoring system, households are classified into three distinct categories: severely poor, poor and vulnerable/transitional. However, it is important to note that this classification does not factor in the risks posed by climate change. While the primary goal of Aswesuma is to alleviate poverty, there is a real concern that households (especially those at the periphery of the poverty line) are at risk of falling into poverty when exposed to climate-related shocks. Social protection can play a relevant role in preventing this and protecting people from falling into poverty, if the data in the database includes indicators that can capture such "at-risk" households in advance of a shock, and can quickly support either in anticipation, or right after the disaster unfolds. This would enable the database to capture the dynamic nature of poverty, and allow social protection

systems to deliver on their protective function, based on climate vulnerability at risk households.

In light of these challenges, it is recommended that the development of a specialized climate vulnerability score be tailored to each category of poor households. To facilitate this process, the government could adopt a simplified framework categorizing climate risk into three levels: high, moderate, and minimal. The climate vulnerability scoring could enable other government and non-government partners to implement a more targeted and effective support to those most at risk in advance of or following a climate disaster. Furthermore, enhancing the existing registry to include detailed information about climate-vulnerable households—particularly those not currently benefiting from the Aswesuma programme—can greatly improve the delivery of reliable and timely early warning information. This strategy would help identify non-beneficiary households that are particularly vulnerable to the adverse impacts of climate change, ensuring that support and resources are directed where they are needed most. As an interim measure, individuals not currently entitled for Aswesuma but living in disaster-prone areas at the divisional level could be integrated into the social registry. This would enable pre-identification and facilitate the rapid delivery of assistance in the event of a disaster. The existing design of the social registry allows for the inclusion of non-beneficiaries, providing an entry point for such an approach

IV. PROGRESSIVELY BUILD A HOUSEHOLD-LEVEL CLIMATE RISK INDEX (CRI) IN THE INTEGRATED WELFARE MANAGEMENT SYSTEM (IWMS) FOR LONG-TERM USE.

Identifying regions at high risk from climate change is crucial for implementing geographic targeting, especially when supporting households that are particularly vulnerable to climate impacts. Using a climate vulnerability score based on indicators from the multidimensional deprivation score, the government can also significantly enhance its climate-smart targeting strategies. However, relying solely on this approach can lead to critical gaps in understanding the specific climate hazards, levels of exposure, and unique vulnerabilities faced by individual households. To address these gaps, it is recommended that the government develops a comprehensive and detailed risk and vulnerability analysis tailored to the household level. This analysis should be integrated into the newly proposed Integrated Welfare Management System (IWMS).

As stated in the LAO PDR case study above, collaborating with international partners to create such an index can yield significant benefits. Additionally, including climate vulnerability indicators in the Household Income and Expenditure Survey (HIES) conducted by the Central Statistics Department (CSD) could provide valuable household-level information. The government has an opportunity to learn from successful strategies implemented in other countries. For instance, the government could adopt a CRI similar to the Dominican Republic's Climate Shock Vulnerability Index (CSVI), which assesses and ranks households on a scale of 1 to 10 based on their vulnerability to climate-related shocks. In this ranking system, households with lower scores indicate higher vulnerability and are prioritized for assistance during a climate crisis. This proactive approach ensures that help is directed to those who need it most, enhancing the efficiency and effectiveness of disaster response efforts. Moreover, such a system allows for targeted interventions that meet the specific needs of the most at-risk populations, ultimately fostering greater resilience in communities facing climate uncertainties.

V. REVAMP THE EXISTING LIVELIHOOD COMPONENT OF THE SAMURDHI PROGRAMME TO ADDRESS CLIMATE RISKS AND IMPACTS TO LIVELIHOODS.

It is recommended that climate risk information and forecast data should be leveraged to

inform the various projects supported by social development funds and Samurdhi community banking funds. A comprehensive mapping exercise could be conducted to pinpoint the locations of all current and prospective Samurdhi projects. This mapping will identify the specific climate risks these initiatives may encounter, allowing for adjustments to project activities where feasible to enhance their resilience. As Samurdhi prepares to fund pilot projects from 2024 to 2026, it is recommended that these projects are designed with a risk-informed approach. This includes implementing checks and balances that ensure the sustainability of funded activities and their alignment with the community's needs in light of projected climate risks. Additionally, further research to overlay climate risk maps with the country's various livelihood zones will unveil which livelihoods are most vulnerable to climate change impacts. Such analysis could provide critical insights into developing targeted interventions.

To enhance and diversify the programme's reach into new areas, the government should consider aligning the Samurdhi programme initiatives with its broader programmes funded by the Adaptation Fund and the Green Climate Fund. Furthermore, the government could explore the development of a proposal that targets new global mechanisms, such as the Global Shield or the Loss and Damage Fund, to enhance adaptive social protection within the Aswesuma and Samurdhi programmes. Collaborating with development partners can offer essential support for preparing funding proposals, starting with technical assistance from external sources. An immediate action item could be to review social protection-type projects previously funded by the SDG Fund that has promoted sustainable livelihoods over the last two to three years. Insights gained from this review could guide future project design for applying for climate finance from the SDG Fund or the other funding mechanisms.

VI. STRENGTHEN COORDINATION AMONG KEY GOVERNMENT AGENCIES, NON-GOVERNMENTAL ORGANIZATIONS, AND INTERNATIONAL PARTNERS TO BETTER ENGAGE IN DISASTER MANAGEMENT, CLIMATE CHANGE AND SOCIAL PROTECTION.

It is recommended that Sri Lanka develops a comprehensive climate risk management strategy to effectively address challenges related to disaster management, climate change, and social protection. Objective 6 of Sri Lanka's (forthcoming) Climate Prosperity Plan commits to promote risk informed investments and enable progressive coverage of social protection to protect people and livelihoods against climate and disaster risks. With better integration of these sectors, the country can effectively undertake climate adaptation and mitigation while also addressing poverty and other development priorities. While the DMC produce the National Disaster Management Plan (NDMP) and the National Emergency Operational Plan (NEOP), which outline the roles and responsibilities of all government agencies in emergencies, it is recommended that the government establishes a multi-level stakeholder process for developing a comprehensive risk management strategy, gathering input from various ministries and partners and including feedback from communities.

To improve disaster response, it's also important to address the fragmentation of roles among disaster management agencies. Currently, the National Emergency Operations Plan (NEOP) defines the roles and responsibilities. However, this was last updated seven years ago. It is recommended that the National Emergency Operation Plan (NEOP) developed by the government and outlining the roles and responsibilities of different agencies during emergencies and under normal circumstances,

is updated, published, and publicised to ensure awareness.[78] In addition, integrating disaster response efforts with the National Social Protection Strategy could significantly strengthen coordination. Establishing a national climate-smart social protection task force could also address coordination gaps between government agencies, non-governmental organisations, and international partners. Below we propose a list of actions for consideration.

- Develop an operational protocol building on the NEOP that outlines the different disaster management agencies, from the national to the community levels, and their roles and responsibilities during an emergency, as well as under normal circumstances. The protocol would benefit from including information on mechanisms to get in touch with the different agencies, approximate time frames necessary for coordination and data sharing, and other things to keep in mind when external agencies as well as social protection ministries plan to coordinate on disaster response through social protection.
- Once the protocol is ready, a national level conference could be organised by the DMD to present the same by inviting actors from the social protection and development sector, to ensure that the protocol meets the needs of these agencies and clarify any outstanding questions.
- To further coordinate between social protection and climate sectors, the Samurdhi department, WBB, and other social protection agencies should actively participate in ongoing consultations and current update processes for the 2025 Nationally Determined Contributions (NDCs), which provides the national policy framework for climate action. Their involvement is crucial in identifying opportunities to integrate social protection to support Sri Lanka's climate adaptation and mitigation goals. Guidance on how to engage and proceed with advocating for integrating social protection into the country's NDC can be found here: Joint-Guidance-Note-Integrating-Social-Protection-in-the-NDCs.pdf
- Liaise with the National steering committee in Sri Lanka to leverage the platform and progress on setting up a multi-level, multi-agency consultation process to prepare a roadmap for the development of an integrated, national level climate risk management strategy that incorporates social protection as a policy option for addressing climate risks.
- Develop Terms of Reference for a task force to be set up nationally, to enhance coordination between climate, disaster management and social protection actors. This task force could meet bi-annually to review progress, discuss challenges, and ensure that the integration of climate risk data into social protection systems remains a priority.
- Leverage the Anticipatory Action Technical Working group in Sri Lanka to have technical discussions on how to integrate social protection and anticipatory action in the roadmap for a national anticipatory action framework. Explore which early actions could be feasibly taken using social protection within expected lead times before disasters.

VII. STRENGTHEN EXISTING SOCIAL PROTECTION SYSTEMS AND BUILD CAPACITIES OF ACTORS.

It is recommended that the government of Sri Lanka prioritises investments in existing social protection system components and implementation processes to establish a strong shock-responsive social protection system. Although digital self-registartion forms are available, data from hard copies still need to be manually entered into the IWMS

78 As of the completion of this report, it is reported that the DMC intends to update the NEOP in the next three months with support from WFP.

system, which is time consuming. Processing all the information collected during the first round of data collection for the Aswesuma programme took approximately 2.5 months. It is recommended that the government and its development partners invest in advanced data collection software to streamline this process. Sri Lanka could learn valuable lessons from experiences from Cambodia, where they have established an on-demand self-registration system in the last three years (Box 2). The government could learn how to integrate digital technologies into the Aswesuma programme to make it more adaptable to climate risks. In addition, it is recommended that the government considers allocating resources to upgrade the data collection on vulnerability, exposure and coping capacity, as well as impacts, and analysis infrastructure of key institutions, such as the Department of Meteorology and NBRO.

The Aswesuma programme has encountered issues with stakeholders' understanding of Aswesuma, its objectives and eligibility requirements. Especially, there have been issues among communities on understanding the purpose of the cash in meeting poverty reduction needs as opposed to meeting all kinds of family expenditure needs. As such, there is a need for a public awareness generation campaign that clearly sets out the eligibility requirements, along with targeted messaging on what the cash is supposed to support with. It is recommended that in the future, when the programme is used for climate risk related shock response, it would also be beneficial to strengthen communication mechanisms to deliver timely information, and have clear communications and early warning messaging for all stakeholders, including communities, on how the cash should be used to minimise negative impacts.

Furthermore, it is recommended that the government considers intermediary arrangements to enable Aswesuma beneficiary bank accounts to receive money from other sources, including climate funds or emergency funds, in case the programme is chosen by humanitarian actors to provide top-ups during or after a climate shock. Below, we propose a list of actions for consideration.

- Leverage the Social Protection working group in Sri Lanka to regularly assess capacity gaps and constraints. In addition, conduct a series of consultations with all relevant line ministries to develop a capacity gaps assessment report and identify needs and financial requirements. Apply for technical support to build the identified capacities, either by applying to existing climate funds or by commissioning joint projects with national agencies and development partners.
- Develop clear communication guidelines and early warning messaging for different vulnerable groups with clear guidance on expected impacts and coping techniques.

Box 2. Cambodia IDPoor

IDPoor is the foundation for Cambodia's social protection services. Households apply to their local commune or with their sangkat level representatives to receive an Equity Card. These equity cards are distributed to identified poor households so that they can participate in Cambodia's social protection system. Applications are registered for all households even if they do not qualify for any equity card. However, more detailed information is gathered if local representatives deem that a household qualifies. Household level information is gathered through standardized interviews into the digital national IDPoor system.

- Consider launching a public awareness campaign to communicate the eligibility requirements and the intended use of the assistance during shock response through social protection programmes like the Aswesuma.
- Train case workers on using digital means to collect and process data to simplify updates to the IWMS.
- Improve the capacity of authorities to store, transmit, clean, sort, analyse and share this data.
- Provide data protection and privacy-related training to ministries that are custodians of social protection beneficiary data.

5. Conclusions

The integration of climate risk data into social protection systems in Asia and the Pacific is not just a necessity but an urgent imperative. The case studies of Lao PDR and Sri Lanka illustrate the vulnerabilities these countries face due to climate change and the critical role that adaptive social protection systems can play in mitigating these risks.

In Lao PDR, the social protection system has made significant strides, particularly in developing the social registry managed by the Ministry of Agriculture and Forestry (MAF). However, the integration of climate risk data remains limited. The findings highlight the need for a more comprehensive approach that includes climate vulnerability indicators in the social registry. This would enable better targeting of households vulnerable to climate shocks and improve the overall effectiveness of social protection programmes. The recommendations for Lao PDR emphasise the importance of investing in robust climate hazard and exposure analysis, improving data integration, and enhancing the capacity of government and local stakeholders to use climate information effectively.

Sri Lanka's transition from the Samurdhi programme to the Aswesuma initiative marks a significant evolution in its social protection landscape. The introduction of a multidimensional approach to deprivation assessment under the Aswesuma programme, as well as direct cash transfers to beneficiary bank accounts, are critical features of adaptive social protection programmes that can enhance the country's ability to respond to climate risks. However, the current siloed nature of ministries and data limits the integration of climate risk data into social protection programming and vice versa. The recommendations for Sri Lanka focus on integrating climate vulnerability indicators in the multidimensional deprivation score, investing in robust climate hazard and exposure analysis, building climate risk profiles for households, and strengthening coordination among key government agencies, non-governmental organisations, and international partners.

Both case studies underscore the importance of a systems approach to integrating climate risk data into social protection systems. This involves not only improving data collection and management but also fostering multi-level, multi-sectoral coordination. The establishment of comprehensive climate risk management strategies, the development of climate risk indices at the household level, and the enhancement of delivery mechanisms are crucial steps towards building adaptive and shock-responsive social protection systems.

The findings and recommendations presented in this report provide a roadmap for integrating climate risk data into social protection systems in Asia and the Pacific. By improving data integration, delivery mechanisms, coordination, and resource mobilisation, countries can better prepare for and respond to climate-related shocks, ensuring that social protection programmes effectively support those most in need. This approach will not only enhance the resilience of vulnerable populations but also contribute to broader goals of sustainable development and poverty reduction.

In conclusion, integrating climate risk data into social protection systems is essential for building resilience in the face of climate change. The experiences of Lao PDR and Sri Lanka offer valuable lessons and insights that can guide other countries in the region. By taking a proactive and coordinated approach, governments and development partners can ensure that social protection systems are equipped to address the challenges posed by climate change, ultimately leading to more resilient and sustainable communities.

Annex 1: Proposed Climate Risk and Vulnerability Indicators for PMT Questionnaire[79]

Perception of Climate Risks

- Household perception of the prevalence of climate-related risks (e.g., floods, droughts, and extreme heat) in the area.
- Perception of the most significant climate-related risks by the household.
- Household perception of the frequency of climate-related events occurring in the area.

Physical Exposure

- Location of the household in high-risk zones (e.g., floodplain, coastal area prone to sea level rise, landslide-prone area, drought-prone region).
- The direct impact of climate-related risks on the household in the past 5 years.
- Household engagement in climate-sensitive livelihood as a primary source of income (e.g., agriculture, fisheries, tourism, etc.)

Impacts on Livelihood and Assets

- Damage to household assets (e.g., home, crops, livestock, etc.) due to climate-related events.
- Impact of climate-related risks on household food security.
- Loss of income experienced by the household due to climate-related risks.
- Health issues faced by household members due to extreme weather conditions (e.g., heat stroke, respiratory problems).
- Disruption of access to basic services (e.g., electricity, clean water, healthcare) due to climate-related risks.

Adaptive Capacity and Resilience

- Access for households to information about climate-related risks.
- Measures in place by the household to prepare for climate-related risks (e.g., insurance, elevated home, water storage system, irrigation, etc.).
- Households' coping strategies in response to climate-related risks (e.g., reduction in consumption, borrowing of funds, sale of assets, etc.).
- Training or information received by the household on how to respond to and recover from climate-related risks.
- Financial or material support received by the household to recover from climate-related events (e.g., government support, NGO assistance, etc.).
- Availability of local organisations or programmes that help households prepare for or recover from climate-related events.

Future Impacts

- There is a degree of concern regarding future impacts of climate risk within the household.
- The extent to which the household participates in activities to protect the local environment from long-term climate risks (e.g., tree planting, ecosystem restoration activities, etc.)
- The availability of resources within the household to invest in long-term adaptation measures (e.g., floodproofing, diversifying livelihoods, etc.)

79 The indicators, while proposed for the PMT questionnaire, could be relevant for incorporation in other surveys/data collection exercises as well, to get more information on the climate vulnerability situation in the country.

Annex 2: Lao Stakeholder Engagement Lists

Table 1: Key Informant Interviews

No	Organisation	Name and surname	Position
1	Ministry of Labor and Social Welfare	Mr. Souphonesay	Deputy Director of Social Welfare Department
2	Ministry of Agriculture and Forestry	Mr. Phetsamone Thanasack	Deputy Director General – Department of Rural Development
3	Ministry of Agriculture and Forestry	Mr. Vongthasone Vilaythong	IT Specialist for Social Registry Management
4	Ministry of Agriculture and Forestry	Ms. Nalinthone Vorasane	Director of Standard and Evaluation Division
5	Ministry of Agriculture and Forestry	Soukphachanh Vannasy	Deputy Standards and Evaluation
6	Ministry of Agriculture and Forestry	Nilaphay Phaxayseng	Technical Staff
7	World Bank	Mr. Kenichi Nishikawa Chavez	Senior Social Protection Specialist
8	Lao Statistics Bureau	Mr. Viengsam Vilaysouk	Deputy Director General
9	Lao Statistics Bureau	Mr. Phinthong Phoummalath	Deputy Head of Research and Planning Statistics Division
10	Lao Statistics Bureau	Mr. Syvixay Thepbouli	Deputy Head of Stability Statistics Division
11	Ministry of Finance	Mr. Vanasong	Deputy Director
12	Ministry of Finance	Ms. Sala Vithabong	State Central Budget Division
13	Ministry of Health	Ms. Latdavanh Sengdara	Deputy Director General
14	Ministry of Environment and Natural Resources	Mr. Vanhthone	Deputy Director Climate Change Department
15	FAO	Mr. Phonexay	Programme Specialist, Emergency and Resilience Portfolio
16	OXFAM	Mr. Kampi Khambabong	Programme Director
17	OXFAM	Mr. Sangkee	Programme Coordinator

No	Organisation	Name and surname	Position
Stakeholders contacted that didn't result in a meeting:			
	Department of Meteorology and Hydrology, MoNRE	Ms. Outhone Phetluangsy	Director General
	National Disaster Management Office (NDMO), MoLSW	Mrs. Vilaykham Lathsaart	Deputy Head of Emergency Preparedness
	Lao Social Security Organization	Dr. Bouahome Phommachanh	Deputy Director General
	UNDRR	Sanjay Pariyar	Climate and Disaster-Resilient Development Officer
	UNICEF	Maryam Abdu	Chief of Social Policy Section
	ILO	Loveleen DE	Technical Advisor - Social Protection
	UNDP	Eriko Nakanishi	Environmental Specialist
	Chief of Disability Division (MoLSW)	Dr. Berthor Tongporthor	Chief of Disability Division

Annex 3: Sri Lanka Stakeholder Engagement Lists

Table 1: Key Informant Interviews

No	Organisation	Name and surname	Position
1	World Vision Lanka	Mr. Jude Kuruvitaarchchi	Manager- Humanitarian Emergency Affairs (HEA)- Disaster Management
2	World Vision Lanka	Dr. Thamilini Joshepkumar	Nutrition Advisor
3	World Vision Lanka	Mr. Vimaladhas Vinasithamby	Climate Advisor
4	Sarvodaya	Mr. Manoj Silva	Project Manager- Resiliency Project OFDA BHA
5	Sarvodaya	Mr.Lahiru Suresh De Zoysa	Monitoring and Evaluation Officer- Disaster Management Unit
6	UNDP	Ms. Dulani Sirisena	Policy&Programme Specialist and Team Leader Sustainable Growth

No	Organisation	Name and surname	Position
7	UNDP	Mr. Vajira Hettige	Technical Coordinator-Climate and Environment Team
8	FAO	Mr. Winson Gnanatheepan	Anticipatory Action Coordinator
9	Disaster Management Center	Mr. Chatura Liyanarachi	Director Preparedness
10	National Disaster Relief Service Center	Mr.Namal Liyanage	Senior Assistant Secretary, Disaster Management Section
11	Department of Meteorology (DOM)	Ms. A.R. Warnasooriya	Director-Regional Offices & Climate Change Studies
12	Asian Development Bank-(ADB)	Mr.Sudarshana Anojan Jayasundara	Senior Social Development and Gender Specialist
13	Department of Samurdhi Development (DSD)	Mr. H. K. Ranaweera	Directors Social Security Welfare
14	Department of Samurdhi Development (DSD)	Mr.M.K.R.U.Krishantha	Director- Livelihood
15	Department of Samurdhi Development (DSD)	Mr.Mahesh	Director- Samurdhi Fnd
16	Department of Census and Statics	Dr. M.D.D.D. Deepawansa	Deputy Director- Sampling Division
17	Disaster Management Division	Mr. Nalaka Priyashantha	Planning Director
18	National Buildings and Research Organization (NRBO)	Mr. Chinthaka Rathnasiri	Acting Director - Human Settlement Planning and Training Division
19	Welfare Benefits Board	Mr. Jayantha Wijerathne	Director General- WBB
20	Welfare Benefits Board	Mr.S.U.Chadrakumaran	Deputy Project Director/SPP
21	Welfare Benefits Board	Mr.Chandana Dissanayake	Monitoring & Evaluation Specialist /SPP
22	Department of Irrigation (Flood)	Eng. S.P.C Sugeeshwara	Director Irrigation – Hydrology and disaster management
23	Ministry of Agriculture	Dr. Upul Rathnayake	Director- Natural Resource Management Center
24	Climate Change Secretariate	Dr. Leel Randeni	Director- Climate Change Secretariat

Annex 4: Key Informant Interview Guide

Date of interview: _____

Duration of KII: _____

Name of respondent: _____

Organization: _____
__

Position/Title/Role:_____

Introductions and Study Overview

Start with introductions, including current positions. Share a little about the project if they are unfamiliar. The World Food Programme (WFP) Regional Bureau Bangkok, in collaboration with WFP Lao PDR and Sri Lanka Country Offices, commissioned Tetra Tech to develop a study on "Strengthening the Linkages Between Social Registries and Climate Risk Data in Asia and the Pacific." The research seeks to understand the gaps and opportunities for climate-smart social protection targeting in Lao PDR and Sri Lanka and define concrete recommendations to incorporate climate risk information into social registries to effectively reach the vulnerable populations most affected by weather and climate-related shocks.

Move on to discussing their engagement, activities, and relevant knowledge related to social protection and climate programming. Questions are updated daily and tweaked for each stakeholder based on this guide.

Climate and Disaster Response Questions

1. What are the primary climate-related hazards affecting the country and how are people affected?
   a. Which groups are vulnerable from climate risks and need assistance?
   b. What kind of assistance do these people need?
2. What does the response look like following a climate event? How are people, programs, and agencies mobilized?
3. Which programs exist that provide assistance to people affected by climate risks?
4. Does your organization/agency employ social protection programming (e.g., safety net) as a disaster preparation and response vehicle?
   a. To what extent is it shock-responsive?
5. Have there been instances where social protection programs have been used in the past to address climate shocks?
6. What difficulties do social protection programs encounter when responding to shocks?
7. What type of disaster-related social protection programs are currently in place?
8. What are some examples of responses to climate-related hazards through social protection programs?
9. Have any strategies within social protection programs proven effective in responding to shocks?

Social Registry-Related Questions

1. Can you tell us about existing social registries and data management systems?
   - **a.** How many people are currently enrolled in the registry?
   - **b.** How often is the registry updated?
   - **c.** How is effectiveness monitored?
   - **d.** What is the current enrollment process in place for the program you are implementing?
     - **i.** What personal identifying data is recorded?
     - **ii.** What is the documentation required for enrolment?
     - **iii.** How much of this is done digitally? What would need to happen to make the process more digitally oriented?
   - **d.** What happens with the collected data? How is the verification process carried out? Can this process be done online? What will need to happen to make the verification process happen online?
   - **e.** Who can get access to the data? Is there any precedent where this programmatic data has been shared with other agencies?
   - **f.** How is the data stored? Where is it stored? Who owns it?
2. What are the current criteria used to determine eligibility?
   - **a.** What variables are currently collected?
   - **b.** What is the targeting strategy employed to identify beneficiaries?
     - **iii.** Are beneficiaries mostly concentrated in a specific geographic area?
3. What is the coverage of your current programs? Does the program currently cover those who are vulnerable to climate shocks and climate change?
   - **a.** Are there individuals highly vulnerable to climate risks who are not currently receiving benefits?
   - **b.** What obstacles have hindered the integration of these [vulnerable] individuals into the benefits system?
   - **c.** Are you aware of any efforts to integrate those vulnerable to climate risk but do not meet the eligibility criteria into social registries?

Link to full Climate Vulnerability Analysis

4. How are social registries currently being used (or not) in disaster response?
5. What kind of assistance is offered by the program?
   - **a.** Do you think the assistance provided helps the target groups in building any form of resilience to climate change? If yes, how? If not, how do you think the type of assistance can be changed to make it more effective?
6. In your opinion, what are the barriers and entry points for integrating climate risk into social registries?
7. What can be improved to better target climate-vulnerable groups?

Program Evaluations and Data Sharing

1. Have you conducted any assessments to understand the efficiency and effectiveness of the mechanisms used for targeting this program? (including how proxy and means tests are scored and how threshold levels are established to determine eligibility)
2. Would it be possible to integrate the data from your program into a social registry? OR is it possible to integrate data from other social protection programs into your database to create a social registry?
3. How feasible is it to share information on current social protection beneficiaries with other programs, like climate action or livelihoods programs?

Annex 5: Climate Vulnerability Analysis

Table 1: Datasets Considered but Not Utilized for Exposure and Vulnerability

Source	Relevant Variables	Most Recent Year	Spatial Scale	Inclusion / Exclusion Justification
Sri Lanka Socio-Economic Indicator Data				
Aweseuma Social Registry Data Sets	SP beneficiary count data	2024	Admin Level 1	Unavailable for download, data-sharing agreements are in development
Government Samurdhi social registry	SP beneficiary count data	2022	N/A; only viewable for one admin 4 at a time	Unavailable for download, data-sharing agreements are in development
WFP RAM	Food consumption index, coping strategy index, dietary diversity score	2022	Admin level 2	Excluded because it is only available at administrative level 2
DHS	Household asset index	2016	Admin level 2	Excluded because it is only available at administrative level 2
Government	Multidimensional poverty index	2019	Admin level 1	Excluded because it is only available at administrative level 1
Lao PDR Socio-Economic Indicator Data				
Aweseuma Social Registry Data Sets	SP beneficiary count data	2024	Admin Level 1	Unavailable for download, data-sharing agreements are in development
ADPC Vulnerability Analysis for Flood and Drought in Lao PDR	Socio-economic indicator data	2024	Admin Level 2	New data – shapefiles were unavailable for download at time of study
WFP CLEAR	Livelihood zones	2015	Custom polygons	Excluded because DALaM 2021 provides the most up to date livelihood zones
USAID Demographic and Health Survey (DHS)	Health indicators and demographics	2017	N/A; location anonymized	Excluded because location is anonymized, and cannot be geographically referenced
IOM Migration Data	Socio-economic indicators	2021	National aggregated statistics	Excluded because there was no geo-referenced data at admin level 3 or lower
Lao Expenditure and Consumption Survey (LECS)	Socio-economic indicators and poverty rates	2020	Admin level 2	Excluded because data is only provided at an aggregated provincial level
Food Security Monitoring Data (mVAM)	Food Insecurity Rates	2022	Admin Level 2	Excluded because data is sampled at a provincial level and would not be able to inform the analysis

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