



Strengthening Climate Resilience of the Lao People's Democratic Republic (PDR) Health System

Annex 17: Emissions Reduction Potential of Project Activities

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1. This annex provides further information on the potential for mitigation co-benefits under a small number of activities in the Strengthening Climate Resilience of the Lao People's Democratic Republic (PDR) Health System project. It re-confirms the decision for the project to target adaptation outcomes only and outlines why it is not currently possible to estimate the likely emissions reduction potential of specific activities, but notes that the project will be able to report on any mitigation co-benefits achieved during project implementation with a relatively high degree of accuracy.
2. The project has been specifically designed to increase the resilience of the Lao PDR health sector to the impacts of climate change via activities that:
 - I. strengthen leadership and governance within the health system so it is climate resilient;
 - II. expand access to and use of climate information and key WASH indicators so the health system can track, prepare for, and manage climate-related risks to health;
 - III. strengthen health system capacity in 25 climate-vulnerable rural districts to better manage climate-related disease burdens, including by engaging 100 health facilities in those districts to better prepare for the health impacts of climate change and upgrading the infrastructure in 79 of those facilities to increase climate resilience; and
 - IV. enable 250 communities to better respond to early warnings, manage and mitigate climate-related risks to health, and seek care appropriately.
3. One sub-set of activities under Component 3 of the project (Rural health facility infrastructure is climate resilient and energy efficient) holds the potential to help targeted facilities reduce the emissions of greenhouse gases, particularly those associated with their energy use. The relevant activities are:

- **Activity 3.2.1 – Conduct GHG emissions and infrastructure quality assessments at climate-vulnerable health facilities.**

The project will conduct assessments to inform the design of infrastructure upgrades, including a facility infrastructure assessment covering electrical and WASH services and a GHG emissions assessment that will use previously designed and tested tools to establish each facility's emissions baseline. The GHG emissions assessment will be conducted using a tool created and tested by NGO Healthcare Without Harm, which estimates health system emissions from infrastructure and the supply chain. The assessment will inform and support local and national level policy and action planning for a low-carbon health system. Trained MoH enumerators will be comprised equally of men and women. Infrastructure assessment results will enable the project to identify the type and combination of infrastructure upgrades each facility needs to improve service delivery for climate-related diseases and sustain climate-resilient WASH services. Emissions assessment results will also inform the development of GHG emissions reduction and energy-saving targets for all 79 facilities. This will enable the project to prioritize the upgrades that reduce health facility emissions. The project will share GHG emissions assessment results with relevant stakeholders (e.g., other development donors and implementing partners) already investing in upstream upgrades to MoH systems, process, and storage facilities to inform additional GHG emission-reduction activities. This will contribute to the GoL's ongoing effort to develop a national carbon mitigation plan, in line with their COP26 commitment to developing a sustainable, low-carbon health system by 2030.

- **Activity 3.2.3 – Upgrade electrical services to be climate resilient.**

Improvements will be site-specific based on on-site assessments, though solar-powered (or other renewable energy) solutions will be prioritized where appropriate. Refurbishments may also include installing PV power generation and storage systems to secure power supply to health facilities and to support cold storage infrastructure for essential medicines, vaccines, and heat-susceptible materials. The PV installation will cover both the panels and battery storage with an estimated three days of autonomy. The facility upgrades will be sourced from local suppliers

where possible, on the national market when not available locally. The project will engage vulnerable populations, including women and youth, across the supply chain where feasible. The project budget includes enough funding to support 79 target health facilities with electrical service upgrades (pending feasibility and needs assessments).

4. Due to the small-scale nature of the renewable energy installations (on which more detail is provided below), the project should not be considered cross-cutting. The project activities, including those highlighted above, are aimed at increasing the resilience of the sector, not reducing emissions (which are already minimal given the context of the health sector in Lao PDR – a least developed country with an underdeveloped health system). The activities under Component 3 are designed to:
 - Improve the quality of care in provincial, district and local healthcare facilities, particularly related to climate-driven diseases and health impacts; and
 - Increase the resilience of the targeted facilities to the current and projected physical impacts of climate change.
5. In some cases, the improvements to facilities' electrical systems will have an anticipated mitigation co-benefit. In other cases, the project will increase the total energy available to individual health facilities, where current energy availability is too low for consistent quality of care. Any increase will be provided via renewable sources, but this will not necessarily displace current energy use and, therefore, will avoid increased emissions rather than reducing existing emissions. There may be further efficiency gains achieved through passive structural improvements like increasing natural ventilation and cooling (shade) to reduce power burden.
6. It is critical to note that all facility-level resilience investments will be based on site-specific assessments (under activity 3.2.1). These assessments will be undertaken in early implementation and will guide the specific applications in each facility.
7. Initial planning and budgeting processes, based on assessments undertaken in a sub-set of nine targeted facilities (see Annex 14), allows for solar PV and battery systems to be installed at 78 health facilities, as follows:
 - 2 targeted provincial hospitals will receive 32 solar panels (1.24kw/day) and sufficient battery storage to allow for an estimated three days of autonomy [for critical services](#).
 - 10 targeted district hospitals will receive 26 solar panels (1.24kw/day) and sufficient battery storage to allow for an estimated three days of autonomy [for critical services](#).
 - 67 targeted district hospitals will receive 22 solar panels (1.24kw/day) and sufficient battery storage to allow for an estimated three days of autonomy [for critical services](#).
8. **While these installations will, undoubtedly, reduce greenhouse gas emissions from the facilities (or in some cases avoid increased emissions), we are not in a position to provide a credible estimate of the mitigation potential as the health sector does not have a baseline of current emissions at national or facility level.**
9. To address the baseline gap and to ensure the project can report on mitigation co-benefits achieved, the project will undertake a comprehensive greenhouse gas emissions assessment at each target facility. The assessment, using a tool developed by NGO Healthcare Without Harm, estimates health system emissions from infrastructure and the supply chain. The assessment will inform and support local and national level policy and action planning for a low-carbon health system.
10. Once the initial assessment is complete, we will have a clear picture of current emissions across the targeted facilities against which to measure future anticipated reductions. Annual assessments will be undertaken during the project's implementation period (years 3-5) to measure changes in emissions as project activities are implemented.
11. **The project can commit to providing realized emissions reductions/avoided emissions information to GCF in regular project reporting.**
12. Further information on the baseline assessment tool is provided below.

Facility-level carbon footprinting exercise and action planning (under project activity 3.2.1)

13. A baseline assessment of a facility's carbon footprint (including its supply chain) is necessary to develop an action plan to mitigate and reduce its emissions. By estimating an institution's carbon footprint, a breakdown per source and quantity of emissions can help design an appropriate mitigation plan. Knowing the major emission sources can allow an institution to target early mitigation efforts.

14. This bottom-up approach will involve the following activities:

- Development of training tools and translation of the Climate Impact Checkup Tools (including the Carbon Hotspots Tool integrated into the Checkup online calculator, guidance documents, and training tools, among others) from English to Laotian and integration of the translated tools into the existing data center of HCWH (Hippocrates Data Center).
- Selection of Laotian trainers from sample health facilities and the MOH who will be capacitated to use the Checkup Tool and who will then cascade the training to other health facilities in the country. Localizing the training will result in more effective, meaningful, and sustainable engagement with the health facilities.
- Conduct training of trainers (TOT) with at least 36 Laotian trainers from 180 health facilities (2 from each province) and representatives from the MOH. These trainers will also be trained on how to monitor and provide technical assistance to health facilities in their yearly updating of their carbon footprint and action plans. They will also be tapped as local advocates and champions of low-carbon and sustainable initiatives in the health sector.
- Conduct facility-level carbon footprinting exercise and action planning led by the Laotian trainers and supported by HCWH SEA officers. Health facilities will be encouraged to be part of the Lao PDR cohort of [Global Green and Healthy Hospitals \(GGHH\) network](#) where they will receive continued support and technical assistance beyond this project.
- Consolidating the results of the baseline assessments and action plans of health facilities to inform the national-level carbon footprinting exercise and action planning and showcasing case studies of select health facilities in country and/or regional forum.
- Conduct yearly updating of facility-level Checkup data and review of implementation of action plan.

15. This approach is illustrated in *Figure 1*, below.

Figure 1: The hybrid approach on national carbon footprinting (source: HCWH)

