Operational Plan

DOCUMENT OF THE INTER-AMERICAN DEVELOPMENT BANK

HONDURAS

INNOVATIVE ENERGY SOLUTIONS FOR HEALTH SERVICE DELIVERY IN HONDURAS

(HO-T1376; HO-G1257; HO-G1259)

INDIVIDUAL PROJECT OF THE FACILITY
TECHNICAL COOPERATION FOR EXPERIMENTATION
"TC PROTOTYPE"

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List of Acronyms

AEA	Fundación Ayuda en Acción
CIS	*Centros Integrales de Salud* (Integral Health Centers)
CIF	Climate Investment Funds
CTF	Clean Technology Fund
ENEE	*Empresa Nacional de Energía Eléctrica* (National Electric Power Utility)
ESS	energy storage system
FOSODE	*Fondo Social de Desarrollo Eléctrico* (Social Fund for Electric Power Development)
GESP	Global Energy Storage Program
GHG	Greenhouse Gas
GoH	Government of Honduras
IDB	Inter-American Development Bank
PAHO	Pan-American Health Organization
SESAL	*Secretaría de Salud* (Public Health Ministry, Honduras)
SHU	Solar-Powered Mobile Health Units
SPH	Health and Social Protection Division of the IDB
SREP	Scaling-up Renewable Energy in Low-Income Countries Program
UAPS	*Unidad de Atención Primaria en Salud* (Primary Health Care Unit)
UNAH	*Universidad Nacional Autónoma de Honduras* (National Autonomous University of Honduras)
WHO	World Health Organization

OPERATIONAL PLAN
RG-O1676 - INDIVIDUAL PROJECT OF THE FACILITY TECHNICAL COOPERATION FOR EXPERIMENTATION "CT PROTOTYPE"

DELEGATION OF AUTHORITY TO COUNTRY OFFICES[1]

HONDURAS
HO-T1376 (IDB LAB)
HO-G1257 (SREP)
HO-G1259 (CTF GESP)

I. BACKGROUND AND JUSTIFICATION

Description of the Problem

Problem

1.1 According to official sources, as of 1 November 2020, the SARS-CoV-19 has infected 98,212 people in Honduras. 2,675 deaths and 40,687 recoveries have been reported. Despite the fact that since 15 March 2020 the Government imposed a general quarantine that remains in force (with moderate lifting of some restrictions in recent months), the daily number of infections has not yet manifested a significant declining trend.[2] Hospital capacity reached critical levels in major cities in mid-2020, and then gradually normalized, but the pressure on the system and the services to respond to the crisis remains high, and there is great uncertainty concerning the future evolution of the pandemic. A particular problem is that the necessary concentration on the health crisis generates the risk that other diseases might not be adequately covered by health services. These circumstances magnify the possibility that many people, particularly in remote areas, might not be able to receive the medical treatment they need in a timely manner.

Causes

1.2 The country's response to the health crisis caused by COVID-19 has been very limited due, in part, to significant weaknesses in the infrastructure associated with the provision of health services, in terms of both the quality of the facilities and of their ability to meet the demand.[3] These weaknesses reduce the impact of the initiatives destined to improve the services, as well as emergency response initiatives, to the extent that the quality of the services depends to a high degree on the availability of adequate facilities for their provision.[4] In addition to existing weaknesses, health infrastructure is threatened by a high vulnerability to the impact of climate change.[5] It should be noted that mitigating these weaknesses through traditional methods could be too costly and reinforce construction practices that are closely linked to greenhouse gas emissions.

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[1] The delegation of authority for the approval of CT prototype operations of up to USD 150,000 is established under mif-GN-123.
[2] Official figures are reported and updated daily on the government portal: https://covid19honduras.org/
[3] Hernandez, M., Sousa, L., Lopez, H., Honduras: developing economic potential for greater opportunities - systemic diagnosis of the country, World Bank, 2016, pp 72-77
[4] IDB *Infrastructure Financing in Latin America and the Caribbean: How, How much, and Who?*, 2015, p 7
[5] ECLAC, Government of Honduras, *The Climate Change Economy in Honduras*, *2016*, p. 18.

1.3 In the case of the infrastructure of the Public Health Ministry (SESAL) in particular,[6] the problems have become more intense because the SARS-CoV-2 pandemic is received at a time in which the services are already saturated by the high number of cases of dengue (112,000 cases) and high demand for maternal-neonatal services, injury-related care, and others.[7] SESAL is organized in 20 districts[8] which provide health services of two levels of care: (i) the first level, addressing common health needs through 1,635 establishments which by their capacity are classified into either Primary Health Care Units (UAPS) or Integral Health Centers (CIS); (ii) and a second level, consisting of 31 public hospitals organized by their level of complexity in four types (basic, general, specialty and national).

1.4 There are also problems related to the lack of human capital. The density of doctors in the country is only 3.09 doctors per 10 thousand inhabitants (2017), one of the lowest rates in Latin America.[9] On the other hand, due to the saturation of the hospitals and health centers, which precedes the COVID-19 crisis, many of the health units in remote areas offer medical services that regularly do not meet adequate quality standards (for example, due to lack of supplies and equipment, a significant percentage of deliveries are not met according to established standards).[10] The pandemic has aggravated these problems, affecting more severely low-income populations in rural areas, given that they experience more difficulties to benefit from the health system.

II. THE INNOVATION PROPOSAL

Description of the solution which is being tested

CT Prototype Objective

2.1 This pilot project seeks to test the experimental solution of alternative infrastructure which is based on the utilization of out-of-use shipping containers.[11] These containers will be refurbished to serve as health service delivery facilities. The solution has preliminary evidence of potential impact.[12] The overall purpose of the experiment is to contribute to the improvement of the health system's coverage capacity and to help to innovatively mitigate the risk of hospital saturation generated by the COVID-19 pandemic and other emergencies. The experiment also includes the use of solar energy for the operation of the facilities, storage batteries, and the implementation of telemedicine systems and other innovative health solutions.

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[6] The Health System in Honduras consists of: (i) the private health services system covering 10% of the population; (ii) the public system composed of the Honduran Social Security Institute (IHSS) covering 18% of the mainly wage-earning population and the Secretary of Health (SESAL) covering the rest of the population, especially low resources.

[7] View document https://reliefweb.int/sites/reliefweb.int/files/resources/20200528_PRH_HONDURAS%20COVID-19%20ESP.pdf

[8] 18 are departmental and 2 metropolitan.

[9] Data from the Global Health ObservatoryWorld Health Organization (WHO).

[10] See Baseline Study for the Loan 'Social Inclusion Network Support Program with Priority in Western Honduras' (HO-L1105), 2016.

[11] There is no official worldwide container register, but some companies estimate that out-of-service containers amount to 11-14 million (Integrated Equipment Sales, *Don't Let Those Millions of Shipping Containers Go Unused*, don't date available*;* BudgetShippingContainers.Co.Uk, *How many Shipping Containers are there in the World?*, 2016).

[12] This is a practice that is being implemented in many countries with significant benefits. For example, reused containers have served in the UK to build social housing, in South Africa to design rural virtual classrooms, and in Italy to create intensive care units (World Economic Forum, *The UK is using shipping containers to create affordable housing*, 2019; Samsung Newsroom, *Samsung Africa launches Solar Powered Internet Schools*, *2011*; World Economic Forum, *Hospitals made from shipping containers could help tackle COVID-19*, 2020).

Description

2.2 The initiative consists of the installation of 20 Mobile Primary Health Care Units, hereinafter referred to as Solar-Powered Mobile Health Units (SHUs), designed with shipping containers and powered by photovoltaic solar energy, energy efficiency systems, and storage batteries, in several municipalities of Honduras. The benefits of containers include lower comparative cost per square meter of construction and easiness of deployment and mobilization. [13] In addition, according to several studies, the carbon footprint of buildings designed with containers is significantly lower than that of wooden and concrete buildings.[14]

2.3 It has been agreed with the Ministry of Public Health that the SHUs will be incorporated into its service districts, functioning as Primary Health Care Units (UAPS) or Integral Health Centers (CIS). In compliance with all relevant licensing standards of the Ministry, and under its administration and supervision (or of the Ministry's decentralized health managers, as the case may be), the SHUs will refer patients to public or private hospitals and will provide general medical care and specific COVID-19 care for patients with mild and moderate symptoms (to increase space in central hospitals for patients with severe conditions). In addition to COVID-19 care, the SHUs' service portfolio will include medical care for dengue, malaria, obesity, diabetes, hypertension, and other common morbidities, and will have facilities for vaccine administration and humanitarian medical assistance in emergencies caused by natural phenomena such as hurricanes, storms, etc. In addition, to improve the quality of health services in the SHUs, the project will also fund training and the implementation of telemedicine and other digital health tools. The Ministry of Public Health (or the decentralized health managers) will coordinate the allocation of human resources, medicines, and equipment to the SHUs, based on the existing resources in each respective health district. During the implementation of the project, funding will be negotiated with other donors to strengthen the equipment of the SHUs.

2.4 The experiment is testing a prototype of a solution that combines clean energy technology (solar energy sources and storage batteries) with alternative infrastructure (based on refurbished containers), and with innovative services in the local context (telemedicine in remote areas). The project responds to a strong and urgent demand for health services, intensified by COVID-19 and other emergencies caused by natural phenomena. It should be noted that, in the planning, design, installation, and maintenance of the SHUs, as well as in the other activities aimed at ensuring their social integration and sustainability, adequate criteria for gender inclusion and equality will strongly be taken into consideration.

Description of beneficiaries

2.5 The project will contribute to the efforts carried out by the Government of Honduras (GoH) in the context of the national plan for the containment of the SARS-CoV-2 virus.[15] By expanding the quantity and quality of infrastructure in the health sector, the project will enable the expansion of coverage of existing services. The beneficiaries will be persons from any populational segment who need medical care services on account of common diseases such as dengue, malaria, diabetes, hypertension, and others, as well as early-stage care for COVID-19. It is expected that the project

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[13] Dara, C., Hachem-Vermette, C., Assefa, G., *Life cycle assessment and life cycle costing of container-based single-family housing in Canada: a case study*, Building and Environment, 163, 2019.
[14] Islam, H., Zhang, G., Setunge, S., Bhuiyan, M., *Life cycle assessment of shipping container home: a sustainable construction*, Energy and Buildings, 128, 2016
[15] https://covid19honduras.org/sites/default/files/Honduras_Plan_Coronavirus.pdf

will benefit at least 97,000[16]. The project will also benefit people indirectly by promoting sustainable infrastructure and clean energy to mitigate climate change. Designing the SHUs with reutilized containers powered by photovoltaic solar energy sources and storage batteries will reduce the greenhouse gas (GHG) emissions associated with the construction and operation of traditional buildings and the use of fossil energy sources. It is estimated that 536.5 ton CO_2eq per year of operation of the SHUs will be avoided. As one of the first such projects in the country, it is expected to serve as a climate-smart building model for investors and local authorities.

III. PROTOTYPE EXECUTION PHASES

Definition phase

Problem analysis and identification of the solution

3.1 Because of the problems described at the beginning of this document, it is necessary to strengthen the coverage capacity of health care services in Honduras. The project team determined that this should be done not only by improving existing health service units (which is already being done by the IDB with sovereign-guaranteed loans) but also through the establishment of innovative and more efficient health units that can meet the growing demand for medical services in the demographic segments most neglected by the system (particularly in remote areas). The team also determined that, due to the specific conditions of the Honduran epidemiological map, the required structures must be designed in a modular/mobile manner so that they can be quickly installed, relocated, and can reorient their health service function according to the particular needs of the communities; and it was agreed that reutilized containers are an affordable option to respond to this need.

3.2 On the other hand, it was considered that establishing new health structures requires ensuring a reliable energy supply for their optimal operation. However, currently, a large number of municipalities in Honduras, including communities with significant health care needs, do not have regular access to electricity. On the other hand, municipalities integrated into the electricity grid often experience outages, and grid weaknesses generate significant electricity losses at the national level, affecting the provision of health and other services. Although Honduras has made significant progress in the transition to renewable energy sources, reaching a 62% share of renewable energy in the energy matrix in 2018, more efforts are still needed to increase decarbonization and ensure high levels of efficiency.[17] For this reason, it was decided that the new health units to be financed should operate autonomously with solar energy (including photovoltaic panels and storage batteries), although they will be connected to the national electricity grid as a form of backup (taking into account the fluctuation of solar energy and battery limits).[18]

3.3 In addition to increasing physical infrastructure, it was considered that coverage of health services can be strengthened through the adoption of digital technology, mainly through the implementation of telemedicine mechanisms.[19] These systems allow that special medical services to be delivered to

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[16] Data subject to review once the geographical areas of intervention have been specified and is considered average care of 14 patients daily for two years.
[17] See Project Profile of the HO-L1203 loan 'Modernization and Studies for Capacity Increase of the Francisco Morazán Hydroelectric Plant', II, A, 2.1-2.3.
[18] Technical and legal conditions will also be assessed so that, in certain cases, mobile units can contribute to the network.
[19] Turner, N., Karsten, J., Roberts, J., *Removing regulatory barriers to telehealth before and after COVID-19*, Brookings Institute and The John Locke Foundation, 06/05/20.

remote communities in the country through interactive communication between central hospital's specialists and local physicians. Likewise, they allow patients in remote areas to access early-stage[20] COVID-19 care safely, reducing demand in central hospitals, and could allow remote monitoring of patients who are in-home quarantine. In general, telemedicine can be a key factor in expanding the coverage capacity of health professionals, mitigating the problems of a low density of medical professionals. Given these aspects, it was decided to include telemedicine within the experimental solution package.

3.4 The project team reached these conclusions in coordination with the Executing Agency, Fundación Ayuda en Acción, the Energy Division and the Health and Social Protection Division of the IDB, the Ministry of Public Health, and other relevant actors in the public and private sectors. It was verified that this solution is not being tested in the same terms and conditions in the region.

Implementation mechanism

3.5 The Executing Agency together with the Ministry of Public Health will define the terms for selecting the health districts that may adopt the SHUs temporarily or permanently. After an international competitive bidding process, a company will be selected to perform the assemblage and deployment of the SHUs. The Executing Agency will sign agreements with the regional health directors or the Ministry of Public Health for the allocation of medical personnel, medicines and equipment to the SHUs. The SHUs will have joint governance shared by the Executing Agency and the Public Health Ministry: The Executing Agency will have the responsibility for the administration of the physical and technological infrastructure and the Ministry of Health (or decentralized health managers, as the case may be) will manage and supervise the provision of medical services (including management of the human resources, supplies and medicines). The Executing Agency will support the acquisition of equipment and medicines to the extent that it may channel funds from other donors and will support local staff on administrative aspects related to the portfolio of services, as needed. The maintenance of the SHUs will be carried out by the same company, under the supervision of the Executing Agency, and in accordance with the standards required by the Ministry of Public Health.

Parameters of the experimental solution

3.6 The SHUs will have energetic autonomy and internet connection. Each SHU unit will consist of: (1) photovoltaic panels for power generation, power inverters, and storage batteries; (2) a water station with a pump, a storage tank, and a purification system with multiple filters; (3) an energy-efficient lighting system and air conditioning; and (4) equipment to receive satellite 4G data for telemedicine. The SHUs might contribute to the grid as distributed generators, and for this purpose, they will have bidirectional electricity meters and automatic transfer systems. The clean nature of the energy solution incorporated by the SHUs will contribute to the reduction of greenhouse gas emissions and therefore will support climate change mitigation.

[20] **The initial stage or stage** I occurs at the time of inoculation and early establishment of the disease. This is an incubation period associated with mild and often non-specific symptoms, such as general discomfort, fever and dry cough. During this period, SARS-CoV-2 multiplies and establishes residence in the host, focusing on the respiratory system**. In the stage II** viral multiplication has more noticeable effects on the body, usually in the form of lung inflammation, viral pneumonia, cough, fever and possibly hypoxia. In the **Stage III** the disease reaches a critical state and the prognosis becomes severe, requiring intensive medical attention for the patient. **Systemic hyperinflammation**. A minority of patients with COVID-19 will move to the third and most severe stage of the disease, which manifests as extrapulmonary systemic hyperinflation syndrome. At this stage, markers of systemic inflammation appear to be elevated.

3.7 Five SHUs shall be installed in municipalities with regular access to electricity. Fifteen SHUs, on the other hand, will be installed in municipalities with limited or irregular access to the grid. These municipalities will be selected based on health care needs, territorial priorities, and strategies of the public health system, having a particular preference for remote communities and health districts within the decentralized health management model. It is expected that after the completion of the project and the overcoming of the COVID-19 emergency, the SHUs will be consolidated as mobile health facilities of the first level of care.

3.8 In coordination with the Ministry of Public Health, the following departments have been preliminarily identified for the operation of the SHUs: Choluteca, Lempira, Colón, Yoro, Intibucá, and La Paz. Other departments could be included later, in conformity with the evolution of epidemiological conditions. As said before, through relevant negotiations and agreements, the SHUs will be integrated into local health districts and will operate with the existing human resources (physicians, nurses, support staff, etc.) of those districts. The implementation period of the project will be 18 months, including a period of evaluation and dissemination of results.

3.9 The SHUs' telemedicine system will strengthen the quality of medical services by facilitating interaction between local professionals and central hospital' specialists. This model will be developed and validated in consonance with the model articulated by the Health and Social Protection Division (SPH) of the IDB, and which is being implemented in Honduras in coordination with the Ministry of Public Health and the Pan-American Health Organization (PAHO).

3.10 The SREP funds will be used for the procurement and assemblage of the containers, the equipment, and the solar energy systems. The CTF GESP funds will be used for the procurement of the storage batteries. The IDB Lab funds will be destined to cover consulting services to improve the quality of the health services to be provided in the SHUs, mainly through telemedicine and eHealth solutions. The counterpart funds will be destined to cover the maintenance and administration costs, as well as the costs of the design of the technical specifications for the SHUs.

Implementation phase (16 months)

3.11 To implement this initiative, the following activities will be financed: (i) installation of the SHUs, including the container-based infrastructure, the photovoltaic panels, the storage batteries, the inverters, and water and lighting systems; (ii) establishment of agreements with the Public Health Ministry, the decentralized health managers, municipalities, and other relevant actors, to ensure the availability of human resources and medical supplies in the districts in which the SHUs will be allocated; (iii) implementation of two telemedicine solutions and a staff training program; (iv) implementation of digital eHealth innovations in the SHUs; (v) establishment of an advisory commission composed by stakeholders from the public and private sectors, for the sustainability of the SHUs; (vi) implementation of an impact, monitoring and data collection system.

3.12 The expected results are: (i) 20 SHUs installed and offering health services; (ii) 536.5 ton CO_2eq per year of operation of the SHUs avoided; (iii) 97,440 people benefited from medical attention; (iv) 500 KWp of renewable energy are generated through the SHUs in areas with limited or irregular access to electricity; (v) 10 agreements signed with relevant public and/or private actors to coordinate the maintenance of SHUs; (vi) 1 permanent public-private consultation and coordination commission for the SHUs established and functioning; (vii) 2 telemedicine solutions, implemented in the SHUs; (viii) 100 health professionals and 20 practitioners from the local community who will provide services in the SHUs are trained in telemedicine, biosecurity, and other related areas.

Evaluation and knowledge dissemination phase (2 months)

3.13 In this phase, the results generated by the initiative will be identified, measured, and socialized with relevant stakeholders, and actions will be taken to ensure the SHUs' sustainability and continuous operation after the project. As a general result of the experiment, it is expected that the authorities, investors, non-profit entities, and international organizations will gain a better understanding of the benefits of investment in alternative and sustainable infrastructure, renewable energy, solar storage systems, and telemedicine and that the model might consequently be replicated to other regions of the public health system, or be adopted in other social and economic sectors.

3.14 The following activities will be carried out: (i) technical evaluation and identification of learned lessons (via independent consulting services validated by the public-private advisory committee); (ii) development of a knowledge dissemination strategy; (iii) implementation of a program to integrate the SHU into local communities; (v) development of a long-term (5-year) SHU sustainability strategy.

3.15 The expected results are (i) 1 knowledge product (final evaluation) that synthesizes the evidence of impact generated by SHUs and its learned lessons are disseminated with stakeholders; (ii) 1 program for the integration of the SHUs into local communities is implemented; (iii) 1 long-term SHUs sustainability strategy is designed.

IV. EXECUTING AGENCY AND EXECUTION ARRANGEMENTS

Executing Agency

4.1 The project's Executing Agency will be the Fundación Ayuda en Acción ("AeA"), an NGO with 39 years of international experience, and with a presence in 19 Latin American countries, in which it has offered extensive support with humanitarian assistance under prevention approaches and progressive actions of resilient development for poor populations. AeA has contributed to the establishment of 198 alternative energy initiatives through the sustainable use of solar sources. It has recently supported the creation of two models of solar fields for indigenous rural schools, reducing student dropout; it has also promoted the creation of two models of sustainable clean energy for health integrated solutions into the community of Gracias a Dios, the installation of 185 prepaid domestic solar energy systems in low-income Tolupan indigenous populations in Yoro, and the implementation of a comprehensive system with solar energy for community-level cassava processing in Iriona, Colon.

Implementation Mechanism

4.2 The IDB Lab resources will finance 3 consultancies, which will be awarded via competitive processes:

(a) *Telemedicine* (USD 50,000): this consultancy will provide technical support for the implementation and maintenance of telemedicine systems in the SHUs, will provide training for medical personnel assigned to the SHUs and beneficiary communities, and will subcontract the technical services required for the implementation of eHealth innovations in the SHUs.

b) *Public-private partnerships and social integration of the SHUs* (USD 80,000)*:* this consultancy will offer technical support for the establishment of the public-private advisory commission, the program of social integration of the SHUs with the local communities, and the design and implementation of a strategy of communication and dissemination of knowledge.

c) *Evaluation and sustainability strategy for the SHUs* (USD 20,000): this consultancy will carry out the project's evaluation and will synthesize the data generated into a knowledge product; it will also carry out a technical-financial analysis to establish a long-term sustainability strategy for SHUs.

4.3 The activities of phases 2 and 3 will be carried out in coordination with the various partners of the project, under the supervision of AeA and with the accompaniment of the Secretary of Public Health, the Faculty of Medicine of the National Autonomous University of Honduras (UNAH), the Pan American Health Organization (PAHO), and the World Health Organization (WHO).

V. ALIGNMENT WITH THE IDB GROUP, SCALABILITY AND RISKS

Alignment with the IDB Group

5.1 The project is aligned with the IDB Group's first strategic working priority, i.e. social inclusion and equality, as stipulated in the Second Update of the Institutional Strategy, adopted in July 2019. It is also consonant with the second cross-cutting theme of this Strategy, i.e. climate change and environmental sustainability. The project contributes to the achievement of at least four Sustainable Development Goals: health and well-being (3), affordable and clean energy (7), sustainable cities and communities (11), and climate action (13). Similarly, the project aligns with the second priority area of the IDB Group Strategy in Honduras 2019-2022, namely the accumulation of human capital, and two of its cross-cutting themes, i.e. adaptation to climate change, and innovation and use of new technologies. More specifically, the project is in line with the strategies of the IDB Group and the Government of Honduras to contain the SARS-CoV-2 virus pandemic. The initiative was designed and supervised with the support of specialists from the Health and Social Protection Division (SPH) and the Energy Division (ENE), of the IDB, who are active members of the project team.

5.2 The project is closely aligned with the operation "Program to Support the Containment and Response Plan to the COVID-19 Pandemic in Honduras" (USD 50 million, SPH Division). Specifically, the project is consonant with the third component of this operation, which finances the strengthening of the provision of COVID-19-related services in hospitals and decentralized health units. It is also expected that the project will have synergy with the project "Telemedicine to mitigate coronavirus and to improve access to health services in Honduras" (HO-T1369).

Scalability/replicability

5.3 Several public and private actors will be actively involved in the initiative, and agreements will be signed with many of them to ensure the continuity of the SHUs after the completion of the project. A long-term strategy for the sustainability of the SHUs will be designed. It should be noted that the flexibility of container-based infrastructure warrants that the SHUs could be easily relocated and reused to provide other specific forms of medical services. In this regard, at the end of the project, the SHUs could easily be aligned to the objectives of other IDB-funded health projects, and this could facilitate the expansion of the model. SHUs in rural areas could be particularly adequate to certify compliance with medical conditions in the context of IDB-funded conditional transfer programs. On the other hand, the SHUs could be expanded to cover other types of services, such as remote and digital education in isolated locations.

Risks

5.4 **Risk 1: Logistics.** As it is an operational prototype for direct use by the population, the main risk is that the demand for services will be very high for the infrastructure and the available support, causing inconvenience, delays, discontent, and mistrust. To minimize this risk, the following measures will be taken:

a) Technological infrastructure with cameras, monitoring and alerts. If the infrastructure reaches above-capacity patient levels, alerts will be generated and measures will be taken in a matter of minutes to reduce area saturations.
b) Pool of health professionals. Community support staff trained to take vital signs will be sought to respond to spikes and increases in demand.
c) Patient referral will be coordinated with other first or second-level health units in the district.

5.5 **Risk 2: Sustainability.** The post-COVID sustainability of the project depends to a large extent on regular medical service delivery in the SHUs. This sustainability may be affected if the volume of medical consultations is low and if there is a lack of functionality of the internal support management body. To minimize this risk, the following measures will be taken:

a) Consolidating alliances with local community organizations.
b) Conducting community and neighborhood visits and campaigns.
c) Conducting monthly management meetings and internal processes of verification of sustainability conditions.

5.6 **Risk 3: Environmental and social risks.** Following the Bank's Environmental and Social Safeguard Compliance Policy (OP-703), this technical cooperation is classified as Category "B", that is, as having moderate, localized, short-lived, and mitigable negative environmental and social risks and impacts that can be managed through general environmental, social, health and safety measures.

5.7 The SHUs will not be located on land that is vulnerable to slippage or flooding, nor in protected areas or critical natural habitats. There will also be no impacts requiring resettlement or impacts upon indigenous peoples. Potential impacts during the construction phase may be associated with land preparation, generation of solid and liquid waste, dust, noise, vibrations, use of water resources, soil contamination from accidental oil or hydrocarbon spills, risks to community health and safety, occupational hazards, among others. During the operation of the SHUs, some of the possible impacts and risks may be associated with the generation of hazardous and non-hazardous waste, wastewater generation, fire risk, occupational safety, and health risks.

5.8 To ensure the effective management of these impacts and risks, the Executing Agency will be responsible for submitting to the Bank a Social and Environmental Action Plan, as a precondition for the first disbursement of SREP and GESP funds. This Plan shall contain the following instruments:

a. *Environmental and Social Impact Assessment* (including results of a consultation with the beneficiary populations).

b. *Master Plan for Fire Safety and Life Protection* (which must be validated by a certified professional of the National Fire Protection Association - NFPA)
c. *Environmental and Social Management System (SGAS)*, which will list the potential environmental and social risks and impacts (direct, indirect, cumulative), with their respective mitigation measures, for the construction, operation, and closure stages alike. Instruments to be included in the SGAS are an emergency waste management plan, health and safety plan (including biosecurity measures about COVID-19), solid and liquid waste management plan, efficient water and energy management plan, oil, hydrocarbon, and chemical spill management and control plan, community health and safety plan, and communication plan.

Special conditions and exceptions

5.9 There are no special conditions or exceptions for this technical cooperation.

VI. BUDGET SUMMARY

6.1 The project has a total cost of USD 2.200,000, of which USD 1,400,000 (63%) will be provided by the Scaling-up Renewable Energy Program (SREP)/Climate Investment Funds (CIF); USD 500,000 will be provided by the Global Energy Storage Program (GESP)/Clean Technology Fund (CTF/CIF); USD 150,000 (7%) will be provided by IDB Lab and USD 150,000.00 (7%) will correspond to local counterpart funds.

6.2 The IDB Lab's instrument is a non-reimbursable technical cooperation, given that the project constitutes an emergency response action for a health crisis, and since the performance of the experiment will materialize only in terms of social impact (i.e., improvements to the health of vulnerable populations, decarbonization, and reduction of greenhouse gas emissions) and not in terms of economic value.

	IDB Lab (HO-T1376)	**SREP (HO-G1257)**	**CTF GESP (HO-G1259)**	**Counterpart**	**Total**
1. Definition phase	--	--	--	10,000	10,000
2. Implementation phase	130,000	1,400,000	500,000	20,000	2,050,000
3. Evaluation and knowledge dissemination phase	20,000	--	--	20,000	40,000
4. Coordination and administration	--	--	--	100,000	100,000
Total	**150,000**	**1,400,000**	**500,000**	**150,000**	**2,200,000**
% of funding	7%	63%	23%	7%	**100%**

Results Matrix

Project Objective	Contributing to the reduction of the saturation of the Honduran health system caused by the SARS-CoV-2 virus pandemic, and improving the coverage and quality of health services, through the deployment of Solar-Powered Mobile Health Units (SHU) designed with reused shipping containers and with solar power and connectivity sources.				
Outcome Indicators	**Baseline**	**6 months**	**12 months**	**18 months**	**Definition and verification methods**
	The figures are cumulative				
Patients with mild and moderate symptoms of COVID-19 and other common morbidities receive medical care	0	19,448	58,464	97,440	Definition: number of patients treated in medical consultations in SHUs. Verification: Digital registration of medical consultations in SHUs.
Avoided GHG emissions	0	0	268.25	536.5	Definition: number of tons of CO_2 equivalent avoided. Verification: external evaluations.
Implementation Stage					
Indicator	**Baseline**	**6 months**	**12 months**	**18 months**	**Definition and verification methods**
SHU installed that offering medical services in municipalities with regular access to the electricity grid.	0		5	5	Definition: number of SHUs in municipalities with regular access to the grid according to criteria of the Ministry of Energy. Verification: agreements for the installation and operation of the SHUs.
SHU installed that offering medical services in municipalities with limited access to the electricity grid.	0	5	10	15	Definition: number of SHUs in municipalities with limited access to the network according to criteria of the Ministry of Energy. Verification: agreements for the installation and operation of SHUs.
Renewable energy capacity installed in SHUs	0	125	375	500	Definition: kWp generated by SHUs through its photovoltaic panels. Verification: external evaluations.
Agreements with public, private, NGO, or academic actors are established to coordinate the operation and maintenance of the SHUs	0	4	8	10	Definition: number of agreements signed with public, private, NGO, or academic actors to support the SHUs. Verification: formalized agreements.
Public and private actors participating in a permanent advisory commission for the SHU operation	0	4	10	20	Definition: number of actors registered as members of the advisory committee. Verification: official registration of the advisory commission.
SHUs strengthened through telemedicine	0	0	10	15	Definition: SHUs number. Verification: reports of the processes of designing and implementing telemedicine systems.

Health professionals trained in the management of telemedicine systems	0	30	60	100	Definition: number of trained people. Verification: training reports.
Local practitioners trained in the management of solar energy, telemedicine, and biosecurity systems	0	10	20	20	Definition: number of trained people. Verification: training reports.
Innovative health solutions are implemented in the SHUs	0	0	3	3	Definition: number of solutions. Verification: agreements with startups/companies for the adoption and implementation of solutions.
Knowledge Assessment and Dissemination Stage					
Indicator	**Baseline**	**6 months**	**12 months**	**18 months**	**Definition and verification methods**
The document systematizing the results of the experiment is Developed and socialized in closure workshops	0	0	0	1	Definition: number of documents. Verification: final document duly validated and accepted by the project team, and socialization report.
Strategy of communication and dissemination of knowledge developed and implemented	0	0	1	1	Definition: number of strategies. Verification: final report of the implementation of the strategy.
Beneficiary local community leaders participate in a SHU community integration program	0	30	60	100	Definition: number of people registered in the program. Verification: official program registration.
Long-term SHU sustainability strategy developed and socialized	0	0	0	1	Definition: number of studies. Verification: final document of the strategy.