

How Immunization Supply Chains (iSC) contribute to reaching zero-dose communities



The Supply Chain and Zero Dose COP webinar series

Webinar 1: Supply chain guidance and strategies to reach under-served zero-dose communities

9 February, 1.00-2.30 pm UTC

Webinar 2: Immunization Supply Chain (iSC) interventions: lessons and best practices for reaching under-served zero-dose communities

16 February, 1.00-2.30 pm UTC



Webinar 3: Integrated supply chain approaches to reach under-served zero-dose communities with vaccination and PHC services

23 February, 1.00-2.30 pm UTC

Webinar 3:

Integrated supply chain approaches to reach underserved zero-dose communities with vaccination and PHC services

Experience sharing from:

- **UNICEF Headquarters**
- **Lebanon**
- **South Sudan**





3 GOOD HEALTH AND WELL-BEING

7 AFFORDABLE AND CLEAN ENERGY

13 CLIMATE ACTION

Health Facility Solar Electrification (HFSE)

UNICEF Immunization Roadmap Programming Framework

CHANGE STRATEGIES

- Advocacy
- Partnerships
- Data
- Digital-transformation
- Gender-transformative
- Multi-sectoral
- Resiliency & preparedness

OUTPUTS

- » Improved generation and use of evidence
 - » Strengthened leadership, management and coordination, and strategic planning
 - » Enabled governments and immunization stakeholders to sustainably finance immunization services
-
- » Extended reach of immunization services, including new & under-utilized vaccines
 - » Improved readiness to prevent and respond to VPD outbreaks and pandemics, while achieving eradication and elimination goals
 - » Countries have uninterrupted access to affordable vaccines and immunization-related supplies
 - » Improved availability of potent vaccines at service delivery points
-
- » Responsive and effective social behavior interventions designed and implemented with communities
 - » Improved capacity of frontline health workers to build trust and confidence in vaccination and PHC services

OBJECTIVES



OBJECTIVE #1
Create an enabling environment for immunization and primary health care



OBJECTIVE #2
Enhance equitable access to quality immunization services provided through resilient primary health care



OBJECTIVE #3
Improve demand for quality immunization and primary health services

GOALS

1

Catch up and recover

Vaccinate children missed during the pandemic, restore disrupted immunization services, and accelerate to achieving Immunization Agenda 2030 goals.

2

Leave no one behind

Increase equitable access to and use of existing and new vaccines.

3

Strengthen and sustain

Strengthen immunization programmes to sustainably reach target populations with full vaccination and essential primary health care services

VISION

A world where every child, adolescent and woman fully and equally benefits from vaccinations for good health, well-being and full realization of their potential



PRINCIPLES



IMPACT-DRIVEN



INNOVATIVE

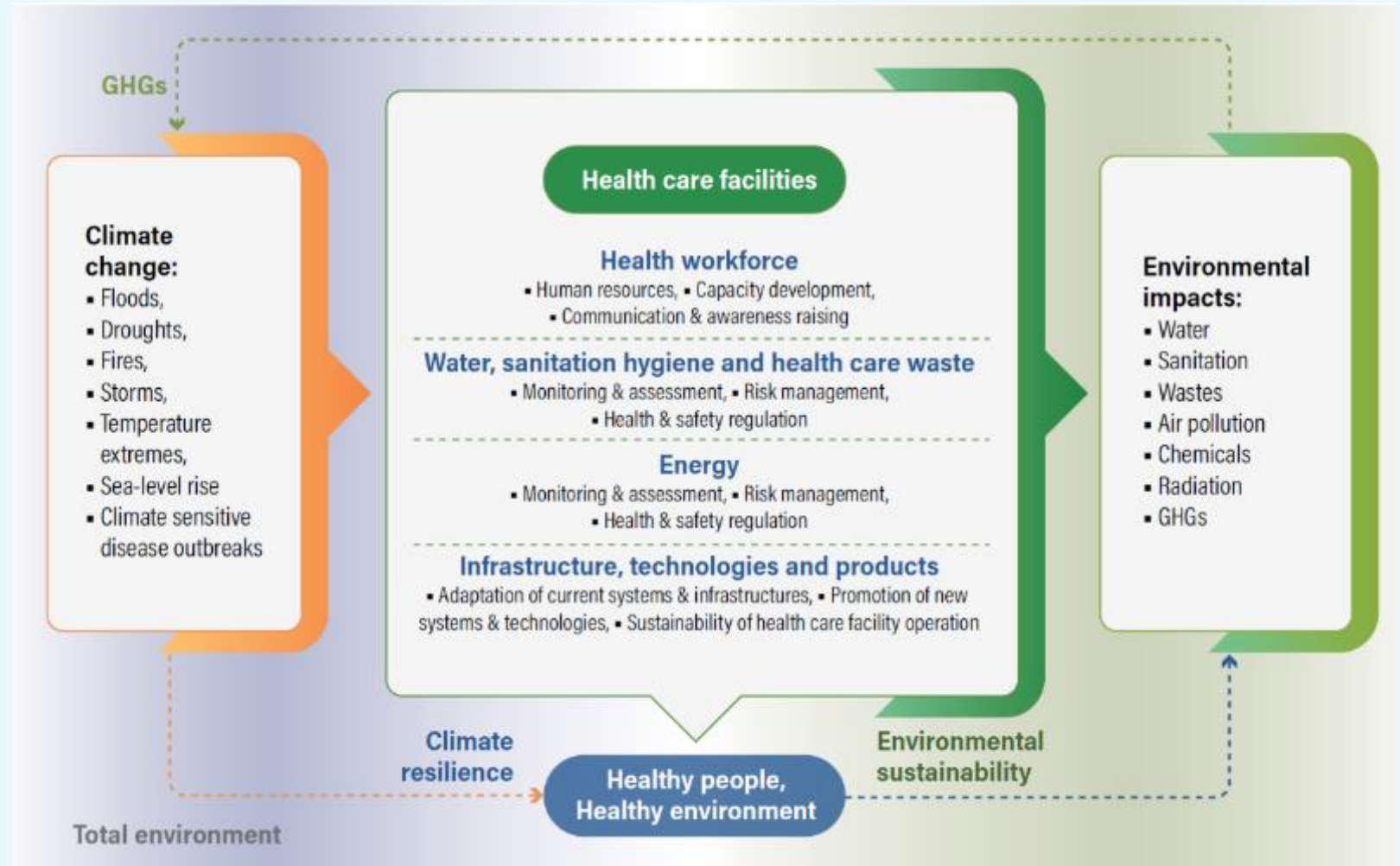
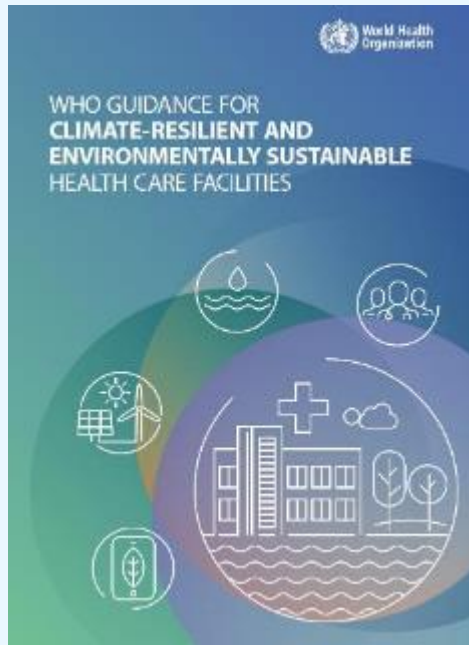


PEOPLE-CENTERED



EQUITABLE

Climate-resilient and environmentally sustainable Health Care Facilities: WHO guidance



Climate-resilient and environmentally sustainable Health Care Facilities: Strengthening primary health care infrastructure

SOLARIZATION



WASH



WASTE

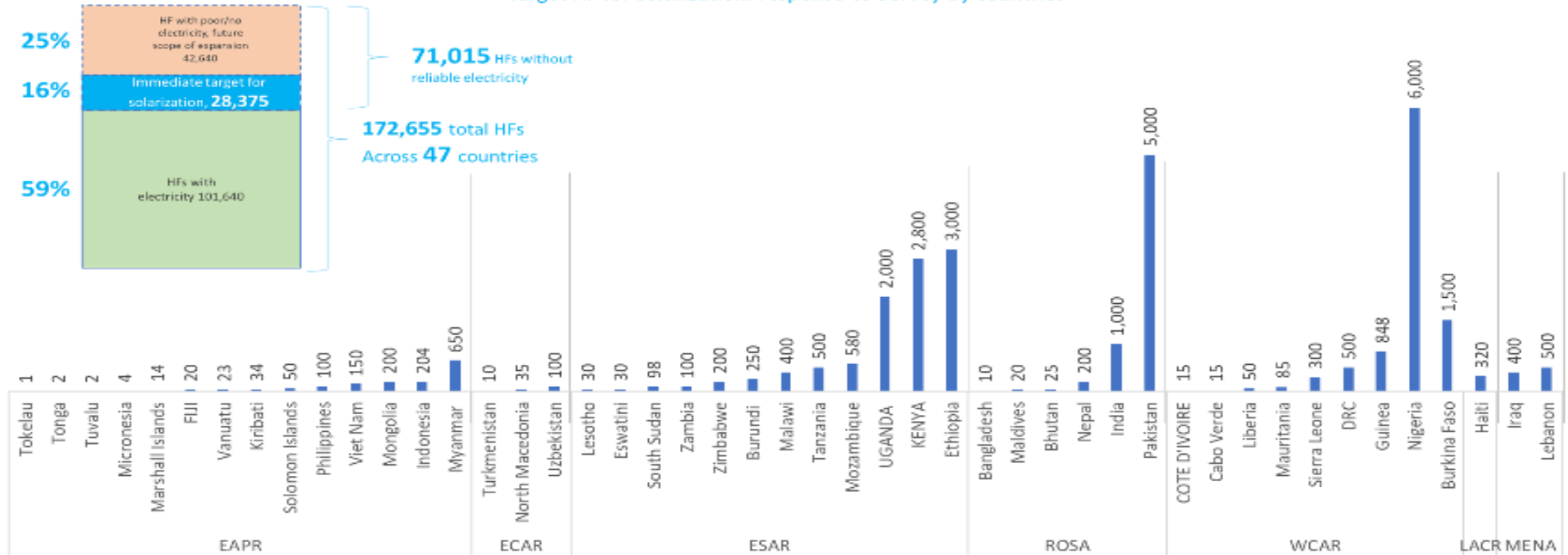


WORKFORCE



Demand for solarization

Target HF for solarization: response to Survey by countries



Lebanon's Experience

Speaker
Dr Bhrigu Kapuria,
Immunization Specialist
UNICEF Lebanon



Ensuring continuation of Immunization and Primary Care Services in times of Extreme Crisis

Lebanon's Solarization Initiative

*Dr Bhrigu Kapuria,
Immunization Specialist
UNICEF Lebanon*

Lebanon- The Context

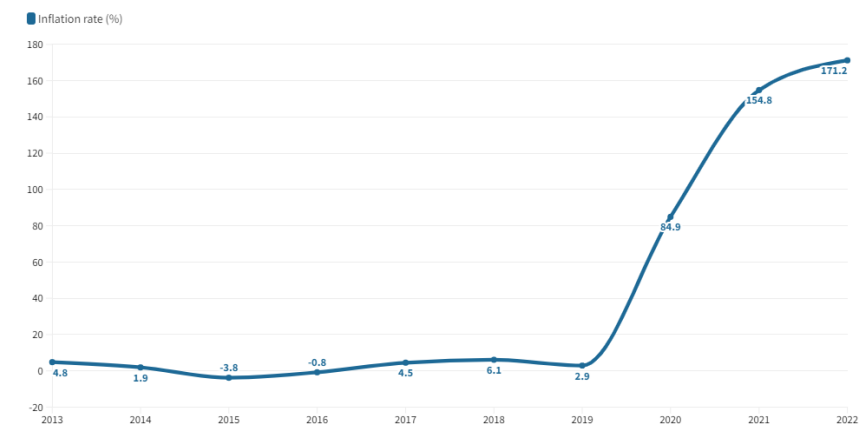
- A country situated in Middle East and known for its culture, history, food and was the epicenter of Healthcare, Education, Trade and Tourism in the region.
- Coming out of a long civil war from 1975 to 1990 and rebuilding itself to become an upper-middle income country.
- Lebanon is currently going through the worst economic crisis of modern history with
 - Inflation rate of 171.2%
 - Economy shrinking by about 58 per cent between 2019 and 2021 — the largest contraction among 193 countries
 - Lebanese Lira lost 97% of its value
 - 82% population living in multidimensional poverty
 - Reclassified as lower-middle income country by World Bank in 2022
- Lebanon hosts one of the largest per capita refugee population in the world and the economic crisis has pushed 89% of Syrian Refugees in extremely poverty



The impact of economic crisis resulted in:

- Tripling of fuel prices within one year
- Less than one hour of Grid Electricity/day even in the capital city of Beirut
- Every household/building/institution dependent on diesel generators

Lebanon annual inflation rate

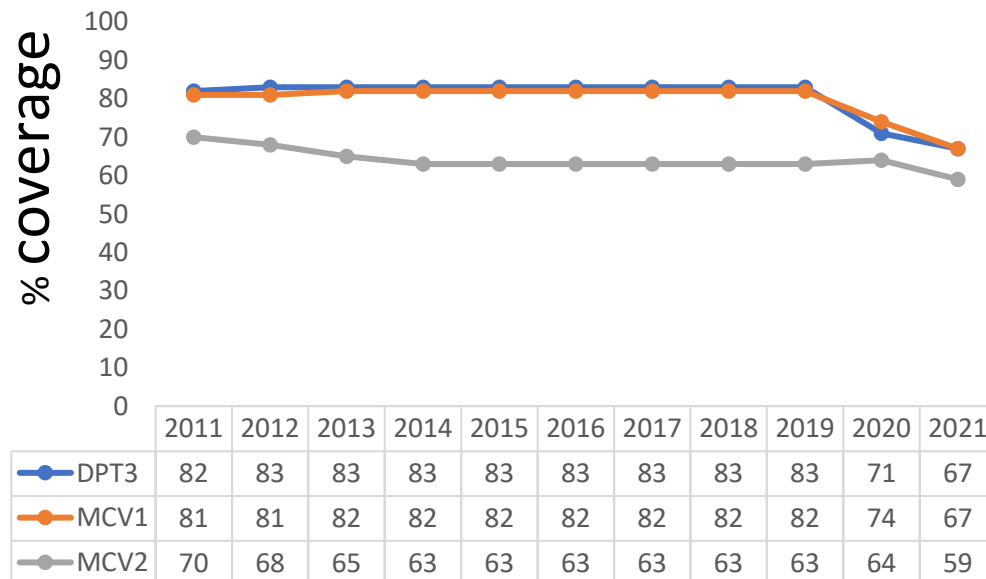


Source: Central Administration of Statistics - Lebanon

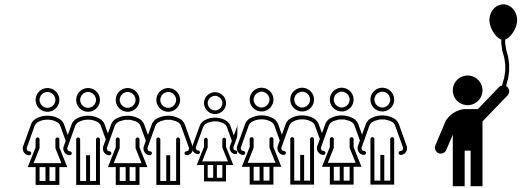
The Health and Immunization Criss



- Mass exodus of Doctors (40%) and Nurses (30%) and private sector becoming non-affordable and non-accessible
- More than 30% drop in vaccination coverages in public sector and 49% drop in private sector
- Low immunization coverage leading to risk of **Measles/Diphtheria outbreaks** and the **threat of Polio** from cVDPV cases in Yemen looms high on the 16 years of polio free status, Risk of Measles and Diphtheria
- Return of Cholera after 29 years indicating impact of economic collapse on Water, Sanitation and Health structures



Every Third Child in Lebanon has missed their basic vaccination



Every Tenth Child in Lebanon has not received even a single does of any vaccine

The Challenge

- EVM 2021 showed a composite score of 63%
- More than 80% of cold chain equipment at facility level non-WHO prequalified- Need urgent replacement of nearly entire inventory with WHO Prequalified fridges
- Substantial number of equipment dependent on Gas/Kerosene due to no electricity
- Health facilities running dark or on diesel generators to function



The Action Plan

- With limited funding availability and ever growing need on all domains of healthcare, **Ministry of Public Health and UNICEF jointly agreed on a two-pronged strategy**

Action Point 1- Urgent and Immediate: Safeguarding vaccines

Action Point 2- Sustaining Immunization and Primary Health Care Services

Action Point 1- Safeguarding vaccines

As the entire cold chain inventory was using Non-prequalified/domestic fridges for vaccine storage and many shifting to use of gas or kerosene → upgrading cold chain inventory was priority

- MoPH and UNICEF embarked on a journey of **'Clean, Green and WHO-Prequalified Cold chain Network'** to ensure vaccine safety even in adverse circumstances
- **The following steps were taken:**
 - The **central warehouse** storing national vaccine stock was solarized
 - **14 Districts (Qadaa) offices storing vaccine** for the entire district were solarized
 - A **replacement plan of 900+ non-qualified fridges with Solar Direct Drive fridges** was developed and initiated in 2022
- **Target:** By June 2023- Almost entire (wherever feasible) cold chain network storing vaccines in the country will run on solar power, connected with Remote temperate Monitoring (RTM)
- This Action Point ensures vaccine safety, making the system reliable and developing confidence among public on safe and potent vaccines under public Health system



A Clean, Green and WHO-PQS ColdChain Network in entire Country



425 SDD Installed in 2022



Central Vaccine Warehouse Solarized



500+ SDD under process in 2023

Action Point 2- Sustaining Immunization and Primary Health Care Services

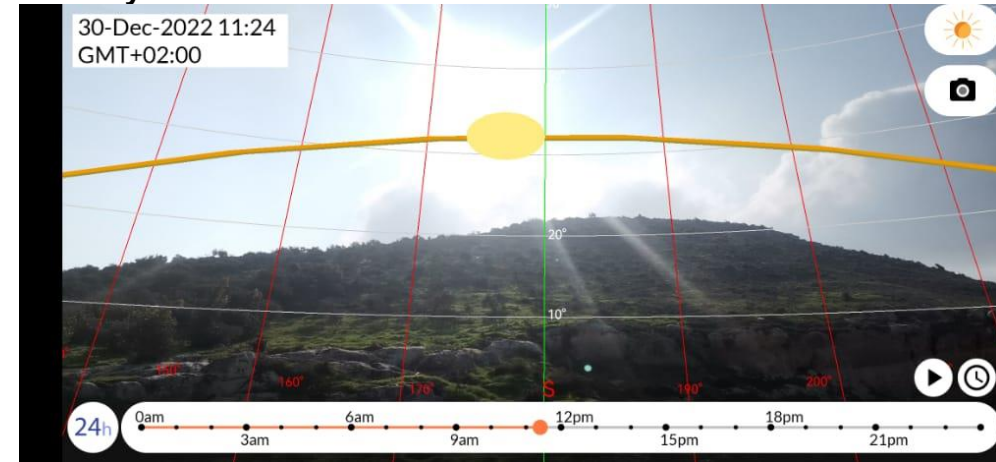
- While service delivery in Lebanon is suffering from multiple challenges ranging from Human Resources to finances, one of the major challenges is electricity.
- All facilities were running on diesel generators for their entire hours of operation and tripling of fuel cost was making it unmanageable.
- UNICEF decided to use 'Immunization as an Entry Point (IaEP) for Primary Health Care' and engaged with donors and stakeholders to support solarization of facilities.
- **The initiative led to securing support for solarizing 150 Primary Health Care Centers which will ensure not only robust vaccine logistics management but continuation of vaccination services and other essential primary health care interventions at the facility.**

Step 1: Assessing feasibility and energy need of all PHCCs

- PHCCs in Lebanon are located at various locations- in multistory buildings, in rented places, in standalone settings and in shared locations.
- Assessing the feasibility of solarization and conducting an energy audit for every facility was critical to decide on next steps.
- **UNICEF PG team at HQ** supported in developing a comprehensive assessment tool, an energy audit system and a robust technical checklist for establishing LTA with solarization companies.
- Lebanon **completed assessment of 275 PHCCs and identified 150 PHCCs fit for solarization**
- Lebanon also **established LTA with 4 national solar companies** to conduct the solarization process.

Step 2: Solarization of 150 PHCCs

- The process of solarization will start from 1st week of March 2023 and is targeted to be completed within 12 weeks.



Feasibility and Energy Needs Assessment for Solarization



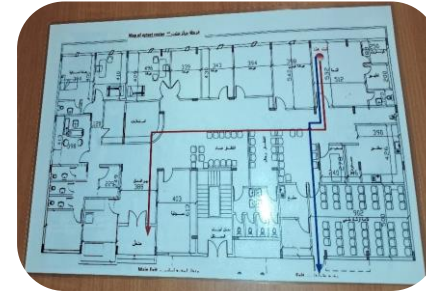
Building photos from different perspectives



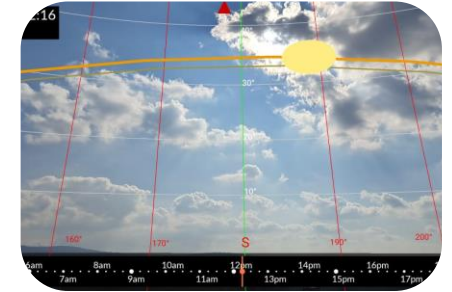
Roof photos from different perspectives



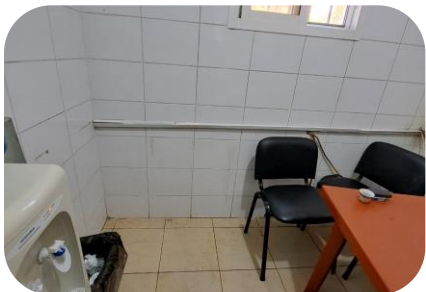
Roof construction type



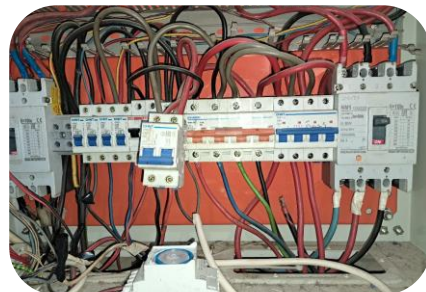
Floor plan drawing



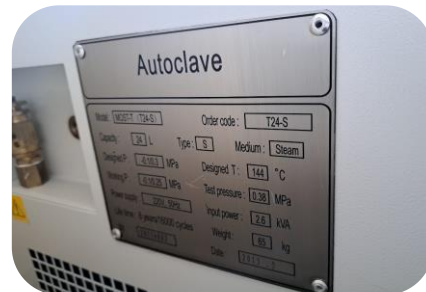
Sun path diagram



Secure location for system batteries & inverter



Distribution box wiring



Equipment data (power & energy consumption)



Network coverage

Bill of Quantity				
مركز طب العائلة - عميت - للرعاية الصحية الأولية				
Name of Item	Quantity	Unit	unit/price	Total estimate
MAIN MCCB 50A X 2 POLE	1	PCS	\$16.00	\$16
MCCB 6A	8	PCS	\$4.00	\$32
MCCB 10A	2	PCS	\$4.00	\$8
MCCB 16A	2	PCS	\$8.00	\$64
TABLE 24 UNIT	1	PCS	\$16.00	\$16
SOCKET	30	PCS	\$0.75	\$23
SWITCH	20	PCS	\$0.65	\$13
EXTERNAL ELECTRICAL BOX 3X3	40	PCS	\$1.00	\$40
WIRE 3MM	250	M	\$0.50	\$125
WIRE 1.5 MM	200	M	\$0.30	\$60
Cache cable 20x10	40	M	\$0.50	\$20
Cache cable 25x40	40	M	\$0.75	\$30
Cache cable 40x60	10	M	\$1.50	\$15
TOTAL				\$447

BOQs of electrical accessories needed

The synchronized efforts will hopefully ensure that Immunization Supply Chain, Immunization Service Delivery as well as other Primary HealthCare Services are maintained even during extreme crisis

So that

‘No One Is Left Behind’



Thanks

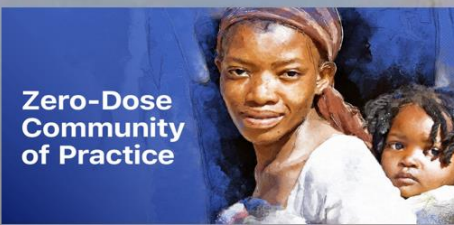
How Immunization Supply Chains (iSC) contribute to reaching zero-dose communities

South Sudan solarization efforts to reach zero dose children

Presenter: Mukwaya Douglas

Webinar 3: Integrated supply chain approaches to reach under-served zero-dose communities with vaccination and PHC services

23 February, 1.00-2.30 pm UTC

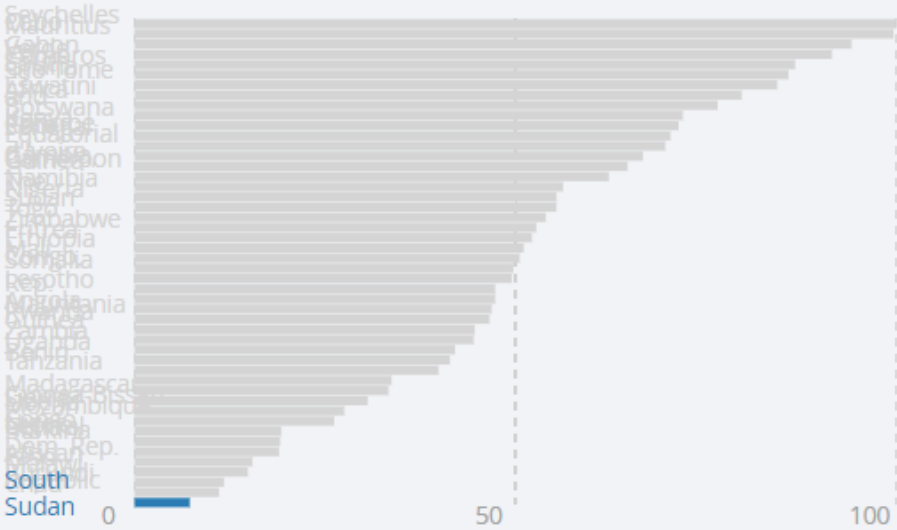


UNICEF is implementing solar electrification projects with aim of strengthening the health delivery system in South Sudan.

Selection of the facilities was based on facilities that deliver comprehensive Emergency Obstetric and newborn care services (CEmONC) in order to have 24-hour power supply.

Currently, the project is designed to provide solar power to National Vaccine Store, ten State cold chain stores, 37 health facilities and 22 county hospitals.

Access to electricity (% of population)



Data from World Bank

- **Provided access:** Solarization has provided access to health primary health care services beyond the normal times of country.
- **Cost reduction:** Gradual move from the electric costly fridges to the SDDs to ensure vaccine availability, prevent stock-outs at lower supply chain levels and reduce on missed opportunities
- **Ensuring quality:** with solar cold chain equipment installed, vaccine quality is assured as the equipment will run 24hrs a day without any interruption.
- **Building resilience:** Solar energy is also contributing to more resilient health systems. Reliable power supply has ensured that core systems for the management of health programmes function effectively.



- **Investing in sustainability:** Most of the immunization activities in the country are donor driven hence with introduction of solarization, this will help in system strengthening and sustainability of the EPI programme
- **Use of data of action and decision making.** Introduction of the eSMT to ensure proper and real stock management. With the use of solarization of HFs, this will help prevent interruption in data flow and real time reporting
- **Urban social development:** Having solarization in health facilities is encourage mothers to give birth from HFs hence reducing zero dose and improving immunization coverage



Boma health facility that has benefited from solarization



Integrated supply chain approaches to reach under-served zero-dose communities with vaccination and PHC services

- Installation of remote monitoring system to the solar sites will provides real-time data access which will shorten response period during maintenance need.
- Sourcing equipment locally is challenging as it has something to do with getting quality product on time and lack of local capacity.

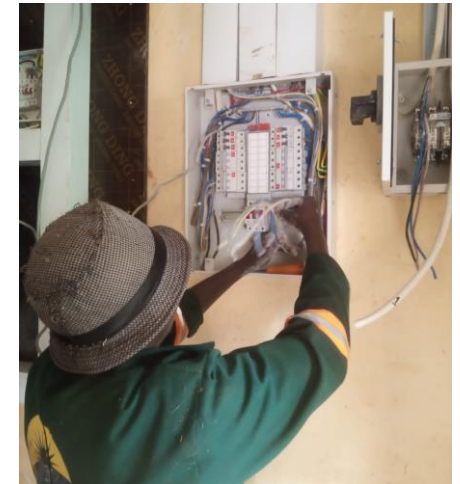
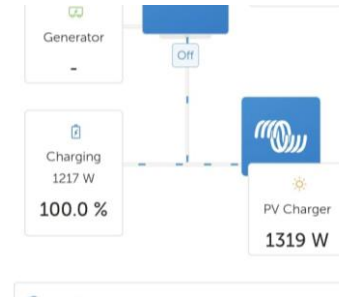


- Lack of technically skilled MoH staff at lower supply chain levels to use EPI tools i.e. eSMT, CCE inventory tools and gap analysis
- Only 5% of the health facilities have been prioritized for solarization
- There is no proper structure for decommissioning and waste management plan of obsolete cold chain equipment which has been replaced.
- There is no clear guidance on suitability of the programme after solarization equipment has been installed



- Introduction of digital health that will help have digital micro-plans and plan for strategies to reach the ZD
- Have integrated micro-plans to ensure that all intervention are taken care of
- Training of technicians on maintenance of these solar equipment to ensure smooth running of the equipment
- Expansion of the county cold chain to store vaccines for a long period of time.
- In order to cut down on cold chain operational cost and protect the environment (ozone depilation) the country has to use all opportunities to phase out of electrical non environmental cold chain equipment and replace them with solar CCE at the region, district and health facilities
- Mapping of HFs with support of RI coverage data to ensure equity of cold chain equipment distribution





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