

SAHA



GREEN
CLIMATE
FUND

SUB REGIONAL DIALOGUE

Sustainable
Adaptation for
Healthcare
Advancement



Agenda

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SESSION OBJECTIVES

Today's Objectives

Present Lebanon **project design timeline** :key goals & what to expect next

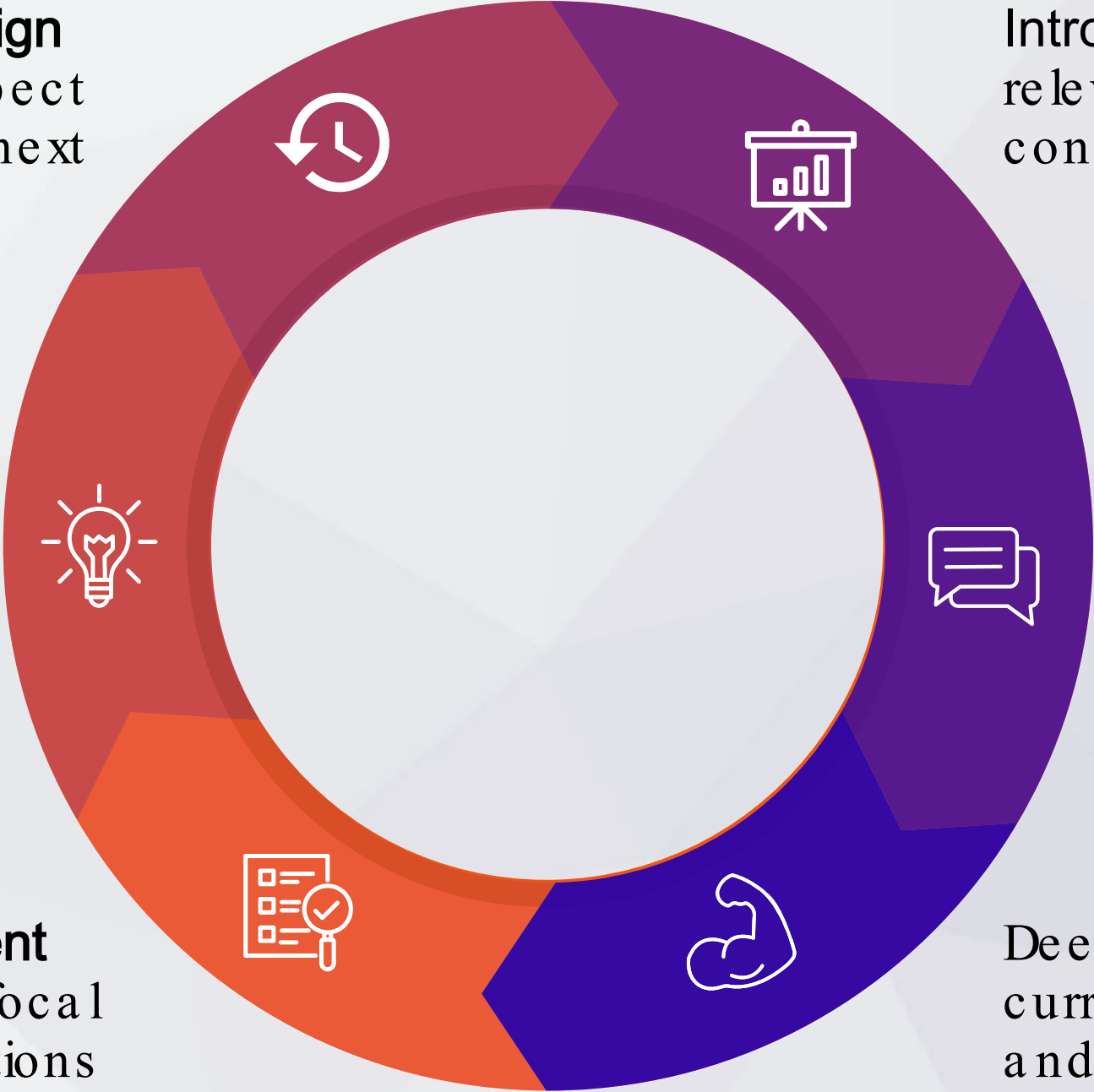
Introduce the **SAHA programme** & relevance to the climate-health context in Lebanon

Strengthen **alignment** with Lebanon's NDAs, MoH, MoE & other national partners

Share the four key **programme components** & collect feedback on country-level needs

Review **stakeholder engagement** conducted and identify further focal institutions

Deepen understanding of Lebanon's current **climate and health threats** and vulnerabilities



CONTEXT OVERVIEW: PROGRAMMATIC & REGIONAL



What is the issue?

Climate vulnerability.

MENA faces extreme weather, flooding, water shortages & worsening heatwaves.

Health impacts.

Increased risks of heat-related illnesses, water- & vector-borne diseases.

Regional context.

Limited health system preparedness, with high vulnerability among women, youth & refugee or internally displaced populations.



We are trapped in a vicious cycle.

Worsening health outcomes driven by climate change are further intensified by the health sector's own emissions, creating a feedback loop of suffering.

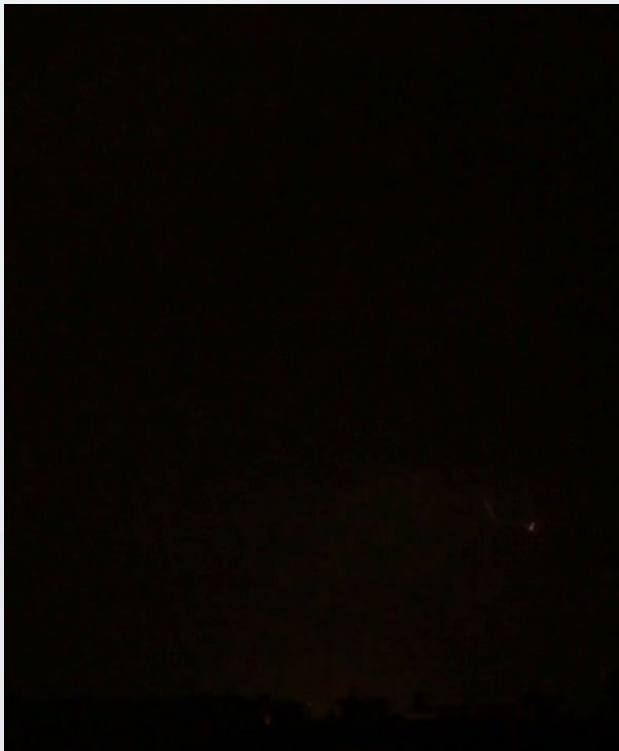
MENA Region Climate Vulnerabilities



HEAT
Heatwaves
Desertification
Water scarcity Drought



WATER
Flooding
Sea level rise



WEATHER
Extreme weather
Tropical cyclones
Flash floods
Dust storms

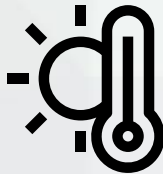


DISPLACEMENT
Climate - driven
displacement,
urbanisation &
instability



AIR POLLUTION
Transportation
Natural dust events
Waste burning
Residential energy use

Health Impacts



Heatstroke & dehydration



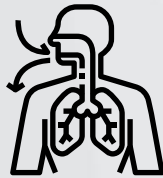
Communicable diseases



Kidney disease



Flood- & storm-related injuries



Cardiovascular & respiratory illnesses



Malnutrition & food insecurity



Premature births



PTSD & anxiety



Waterborne diseases



Chronic disease exacerbation



Health systems are *strained* by climate-driven disease surges, infrastructure damage & limited preparedness

SAHA OVERVIEW:



SAHA: An Overview

Five - year initiative aimed at strengthening health systems against climate threats .

Five countries :

- Oman (Advanced)
- Egypt and Jordan (Climate -vulnerable)
- **Lebanon** and Iraq (Fragile/Post - conflict)

Pathfinder International is the programme's **Executing Entity**

Currently in the **Project Preparation Facility** stage .

Our role in this process is to lead the **project design** .

Output is the completed **Funding Proposal** .

In order to do this, we are conducting the following in each country : **feasibility studies** ; **gender studies** ; **environmental and social studies** ; and **risk assessments** ; among others .



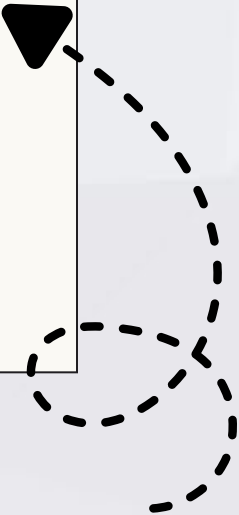


MITIGATION.

*SAHA*mitigates climate change by integrating renewable energy, energy - efficient upgrades, and water management systems into health facilities, reducing emissions and boosting resilience.

ADAPTATION.

*SAHA*empowers communities to adapt to climate change, strengthens health facility resilience, builds the capacity of health workers, fosters climate - smart practices, and advances regional learning.

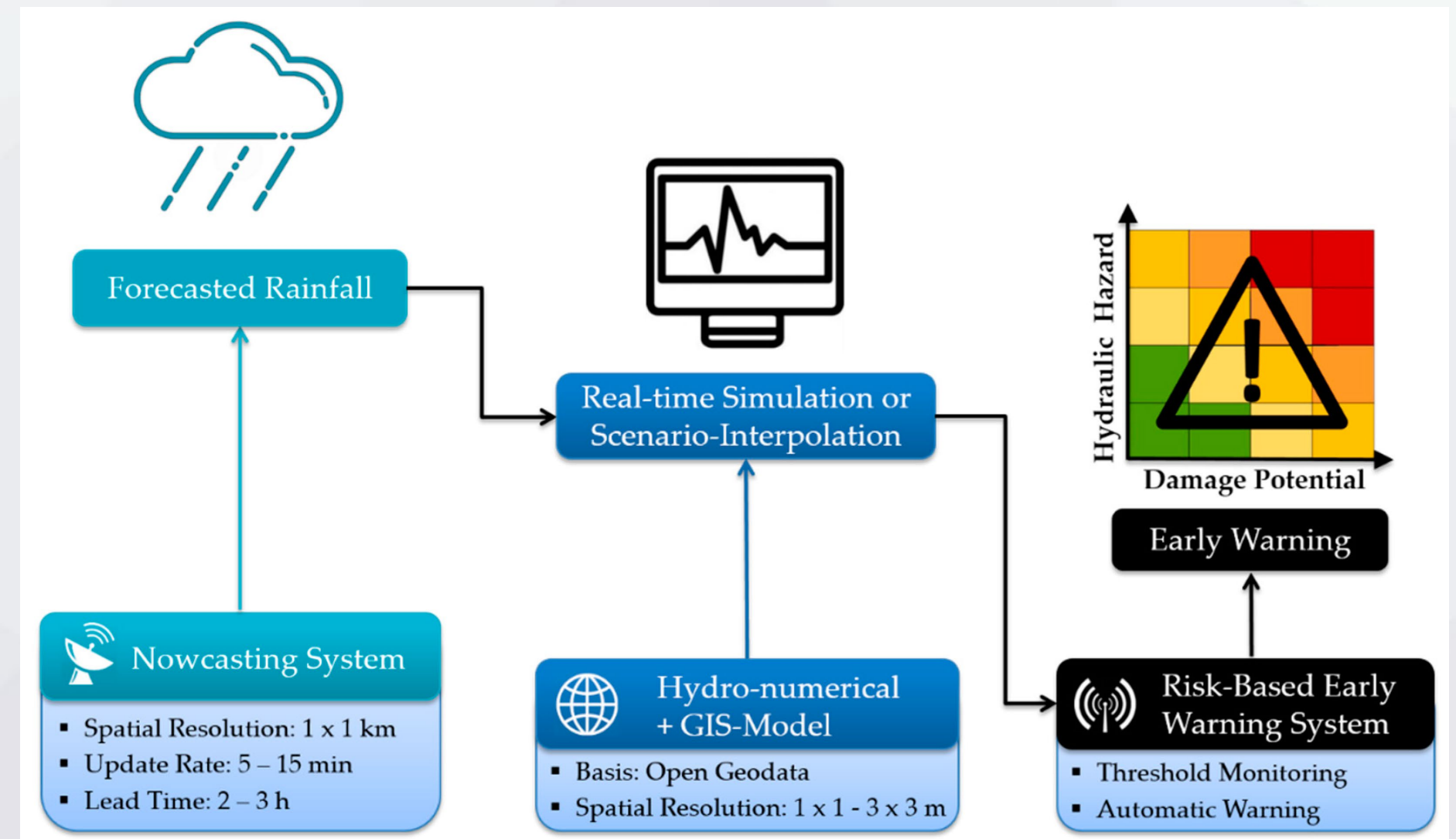


Dual Approach:
Mitigation & adaptation

Programme Pillar #1

EWARS & Data Surveillance

- ➔ Engage with national institutions and stakeholders to create an enabling environment for evidence-driven climate-health action.
- ➔ Establish Climate Informed Early Warning Alert and Response Systems and health surveillance systems.
- ➔ Develop health facility climate preparedness plans and district health adaptation planning mechanisms.



Programme Pillar #2

Capacity Building

- ➔ Deliver technical training for health facility employees on the **medical impacts of climate change**.
- ➔ Conduct training for health facility employees on **operating, interpreting, and implementing facility - level AI-driven Early Warning Alert and Response Systems**.
- ➔ Conduct training for health facility employees on how to **maintain and manage climate -resilient 'green' infrastructure, technologies, and mechanisms**.
- ➔ Developing and Institutionalizing Climate-Resilient Health **SOPs and Response Protocols**



Programme Pillar #3

Infrastructure Upgrades

- ➔ Upgrade climate - resilient infrastructure at health facilities.
- ➔ E.g., Install cost-effective renewable energy solutions; climate-resilient and energy efficient building and technology improvements; climate - resilient water management; **climate - resilient Accreditation** ; maintenance and monitoring systems; and/or national standards for climate resilient health facility infrastructure.



Programme Pillar #4

Community Engagement

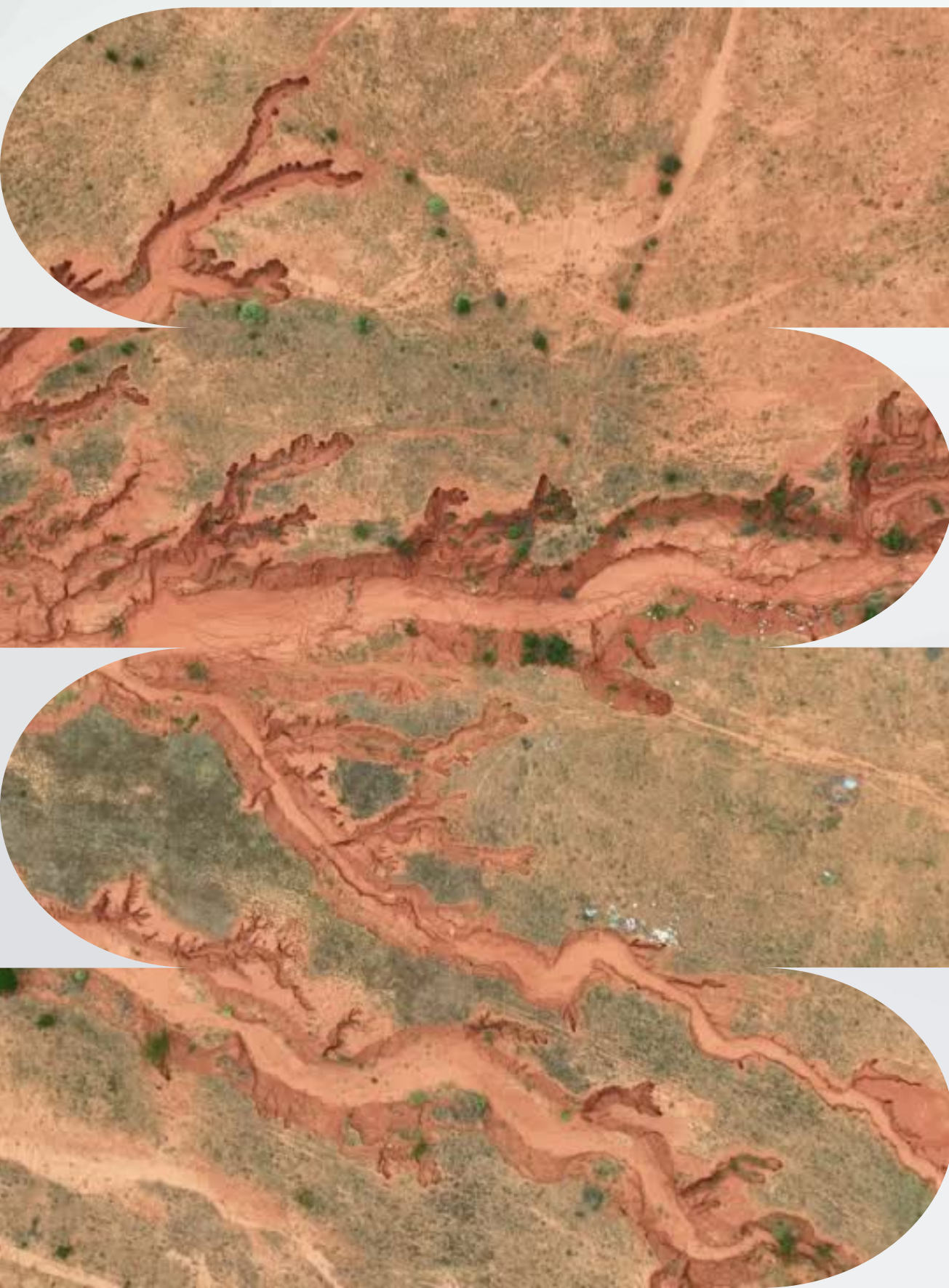
- ➔ Mobilize community climate-health **change agents** and build youth climate-health preparedness
- ➔ Increase access to climate and health **knowledge** for resilient nutrition and water management.





LEBANON'S CONTEXT:

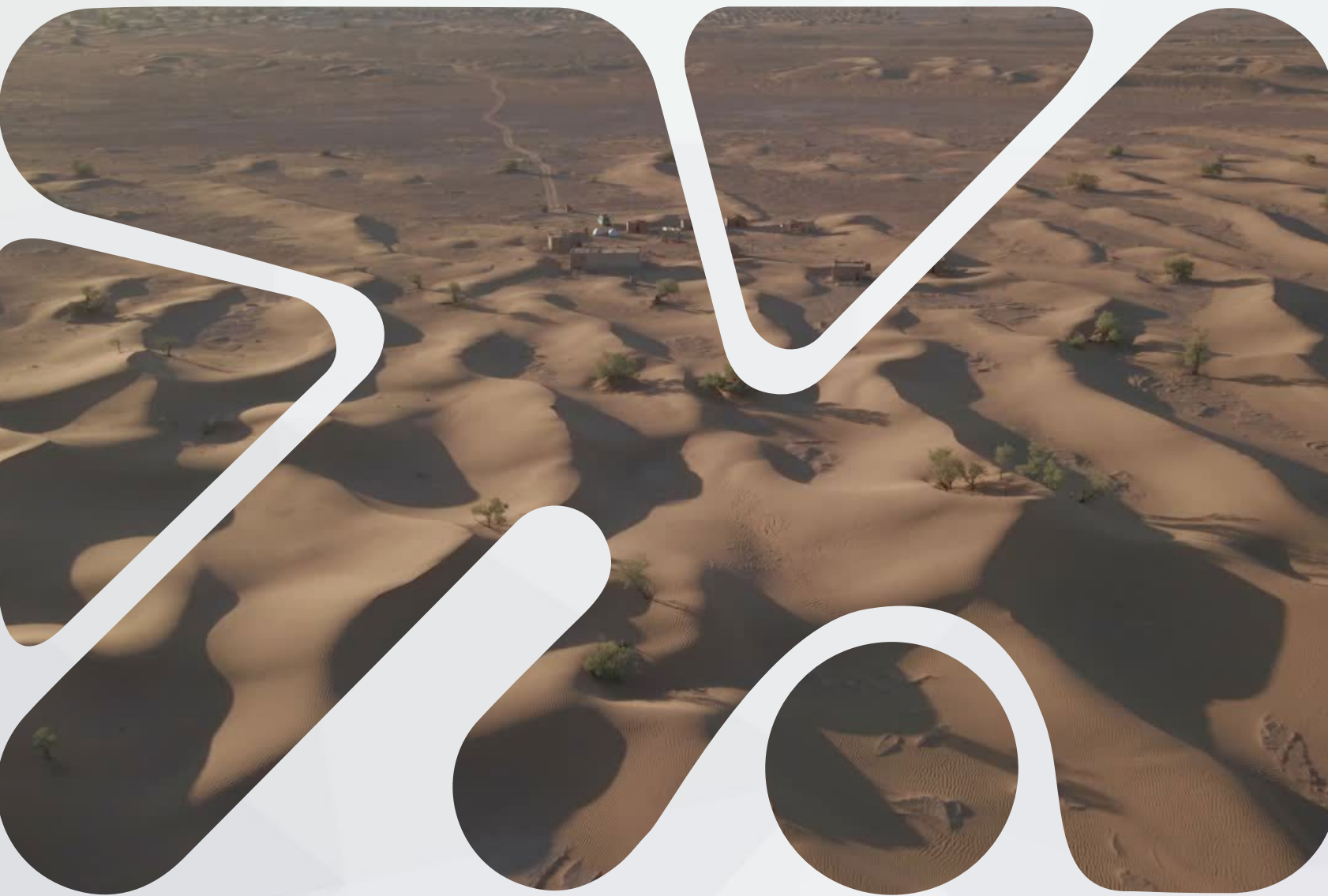
HEALTH, CLIMATE & *SAHA* MODEL



Why is Lebanon a Priority?

- Lebanon faces a **4.3° temperature rise** by 2100, with increased frequency of heatwaves and drought, and a projected 40-70% reduction in snow cover.
- Due to its varied geography, Lebanon faces a **variety of environmental hazards**, including wildfires, sea level rise, flash flooding, and water scarcity. These, in turn, pose a threat to biodiversity and agricultural productivity.
- Climate change is inducing **higher rates of respiratory diseases**, heatstroke, waterborne illnesses, and malnutrition, particularly among vulnerable populations such as children and the elderly.
- **Compound crises** – conflict, displacement, economic crisis, disease outbreak, and chronic underfunding – have weakened Lebanon's ability to deal with the effects of climate change.
- The Lebanese government and civil society have shown **strong interest** in climate-health programs, aiming to strengthen health systems, enhance climate resilience, and protect vulnerable communities.

Lebanon's Climate Context



Historic & Current :

Lebanon has experienced a 16° mean temperature increase (1950-2020), with a 7% increase in the number of hot nights since 1960 and 1.3° increase in surface water temperature of the Mediterranean . Lebanon's precipitation reduction has been unpredictable, resulting in both drought and heavy rainfall .

Projected Climate Impacts :

Lebanon is expected to experience an increased frequency of heat waves and a decreased number of frost days . Precipitation during the wet season is projected to decrease 3- 14% (2041- 2060), with an increasing number of consecutive dry days, particularly impacting Southern Lebanon .

Health & Health Systems Impact :

Climate change -induced increases in temperature, extreme weather events, and heatwave frequency are expected to increase morbidity and mortality . Results include increased outbreaks of infectious diseases (e.g. 2022 Cholera outbreak), increased malnutrition from droughts and floods, increased mortality from extreme weather events, and increased rates of water -/rodent -/vector - borne diseases .

Lebanon's Climate Context: *Systematic Impacts*



Agricultural degradation

Severe droughts, rising heat and erratic rainfall are shortening harvests and driving desertification. **Food insecurity** increases Lebanon's reliance on food imports, increases **rural - to - urban migration**, and erodes cultural heritage tied to the land.



Socioeconomic Vulnerabilities.

Climate change disproportionately affects **refugees and impoverished populations**, lacking social safety nets and with precarious access to services. **Tourism** is disrupted by wild fires and extreme heat, and key **infrastructure** is repeatedly damaged by floods and storms, incurring steep recovery costs amidst financial challenges.



Institutional fragmentation

The Lebanese state's chronic **inability to provide basic services** is dramatically worsened by climate stressors. This accelerates the **shift to privatized systems** of service provisions (e.g. private diesel generators, water tankers), further **eroding public trust and state authority**.

SAHA Design Must Consider Lebanon's Context



SAHA must navigate Lebanon's fragmented governance structure comprised of both ministries and supplementing non-state actors, requiring **flexible coordination** mechanisms with clearly defined roles and communication channels.



PHC facilities differ significantly in condition and capacity, so *SAHA* implementation should be **tailored to each site, with phased upgrades** where needed.



Climate and health data remain uneven and poorly integrated, making *SAHA* an important opportunity to **strengthen data linkages** and **improve system interoperability**.

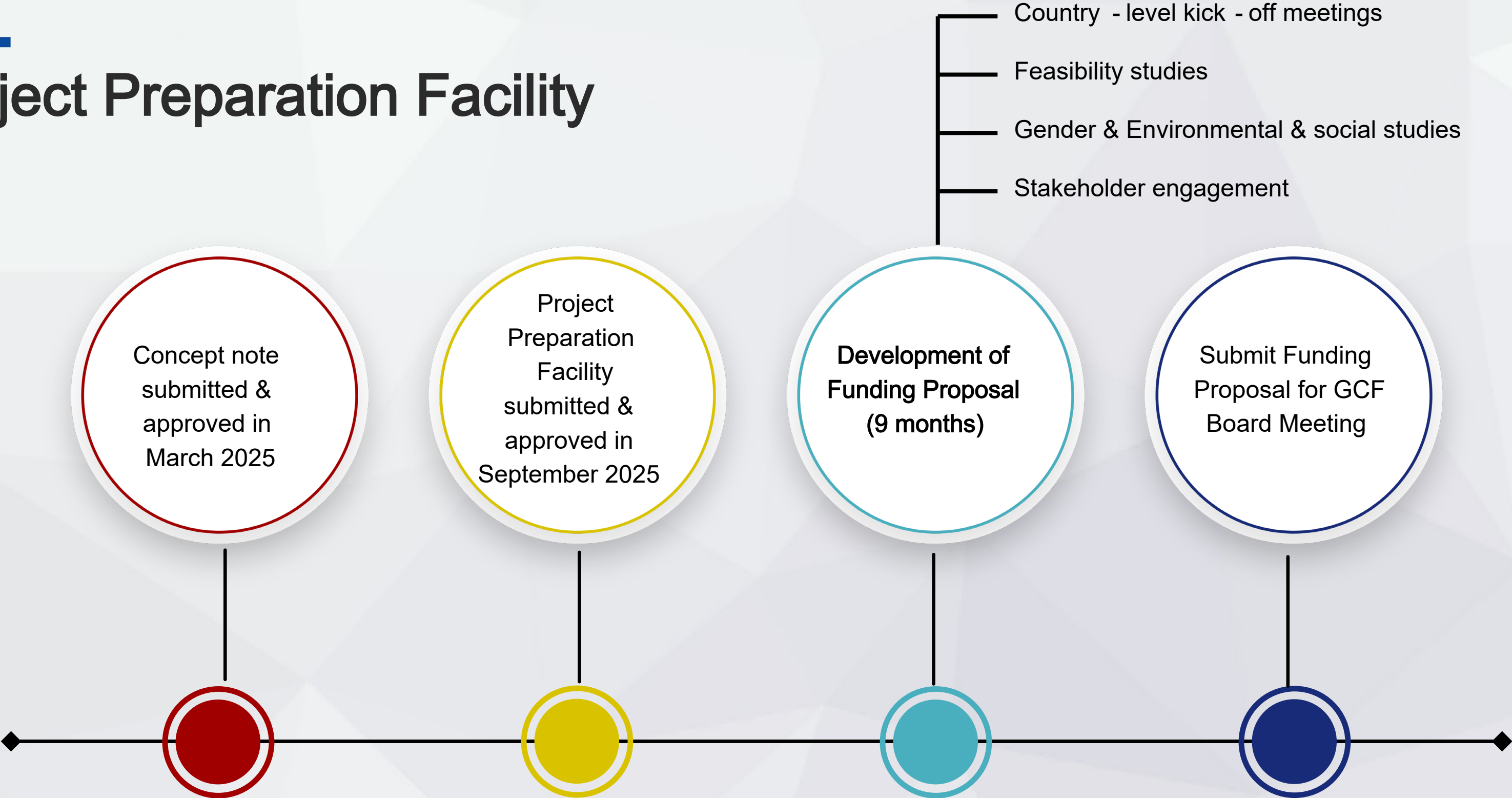


Rural, peri-urban, and displaced populations face higher climate-related health risks, and *SAHA* must ensure **equitable access** to avoid widening existing service gaps.



Timelines and delivery approaches must remain flexible to accommodate regional differences and administrative requirements, supported by continuous learning and adjustment.

Project Preparation Facility



Lebanon Pillar #1 Model: EWARS & Data Surveillance

- Integrate **climate -variables** (heat index, drought alerts, water scarcity) into **disease surveillance**.
- Strengthen EWARS modules used by MoPH and enhance digital reporting at PHC facility level.
- Improve **interoperability** between MoPH and meteorology.
- **Train** PHC facility staff and MoPH on climate-informed health data surveillance.
- Introduce **predictive analysis** for heat-related illness; dust storm-related respiratory disease; and outbreak-prone diseases (e.g., diarrhea).

What are we not considering?



Lebanon Pillar #2 Model: Capacity Building

- ➔ Management of climate -sensitive **diseases** .
- ➔ Emergency protocols for heat waves, dust storms, floods, etc.
- ➔ **Maintain** the facility infrastructure upgrades.
- ➔ Disaster **preparedness** at PHC level (e.g., SOPs and CRPs).
- ➔ Skills to sustain **accreditation** , EWARS reporting.

What are we not considering?





Lebanon Pillar #3 Model:

Infrastructure Upgrades



PHC Facility Vulnerability Assessment:

- Power reliability
- Temperature regulation & ventilation
- Water access, quality, and storage
- Structural Integrity
- Etc.



Climate - Resilient Infrastructure Work:

- Solar PV + batteries
- Cooling and ventilation systems
- Water filtration and reserve tanks
- Flood-proofing and drainage systems
- Etc.



Accreditation & Quality Improvement:

- Assess PHCs against essential standards
- Develop improvement plans
- Link infra. upgrades to accreditation.
- Etc.

What are we not considering?



Lebanon Pillar #4 Model:

Community Engagement

- ➔ Climate risk **communication** (heat waves, dust storms, water hygiene, etc.)
- ➔ Public awareness on health **behaviors** during climate and extreme weather events.
- ➔ **Gender - responsive** messaging.
- ➔ EWARS and emergency **alerts dissemination** e.g., via SMS to the PHC facility's surrounding community.
- ➔ Strengthening connections, trust, and linkages between the PHC facility and surrounding community—"safe space".

What are we not considering?



Who did we meet in Lebanon?

Ministry of Environment / UNDP

Hala Mounajjed (NDA)

Lea Kai

Ministry of Public Health

Fadi Snan

Nadeen Hilal

Randa Hamadeh

Nazem Matta

WHO

Nohal el Homsy

AUB

Mey Jurdi

Rawya Khodor

GHI

Nour el Arnaout

Shadi Saleh

AFD

Cyprien Younes

Rouba el Khatib

ESCWA

Marlene Tomasziewicz

Rouba Arja





METHODOLOGY FOR SITE SELECTION



PHASE 0 - DESK REVIEW

- Review national plans e.g., (H)NAPs
- Map hazards and vulnerabilities
- Compile disease burden and demographic data (e.g., refugee areas)
- Identify potential high - vulnerability governorates (e.g., flood - prone)



PHASE 1 - GOVERNORATE VULNERABILITY INDEX

- Weighted scoring:
- Climate exposure (35%)
 - Population vulnerability (25%)
 - Health burden (20%)
 - Feasibility & contextual factors (20%)
- = Produces a ranking for ministry validation.



PHASE 2 - DISTRICT/SUB-AREA FILTERING

- Criteria:
- Energy and water availability
 - Facility conditions
 - Climate hazard intensity
 - Population vulnerability (IDPs, rural/remote)



POINTS TO REMEMBER

GCF is a climate - fund, so choosing the implementation site should start from the foundation of “which areas are the most *climate vulnerable* ?”



PHASE 4 - FACILITY ASSESSMENTS

- Includes:
- Infrastructure and climate audits
 - Digital readiness
 - Accreditation readiness
 - Intervention costing
 - Final shortlisting



PHASE 3 - CLINIC SHORTLISTING

- Exclusion of:
- Private or rented buildings facilities requiring reconstruction
 - Sites not suitable for accreditation readiness (e.g., state of disrepair)

Vulnerability Level	Governorate	Interpretation
VERY HIGH VULNERABILITY (GVI \geq 4.5)	Akkar	Extreme poverty (highest MPI nationally); recurrent floods and heat; very high refugee concentration; weakest health service coverage and adaptive capacity
	Baalbek–Hermel	Chronic drought and temperature extremes; high agricultural dependence; food insecurity; sparse and fragile health infrastructure
	Bekaa	Severe water stress and drought; climate-sensitive agriculture; WASH risks; high poverty pockets and service access gaps
HIGH VULNERABILITY (GVI \approx 4.0–4.4)	North Lebanon (Tripoli & Minieh-Danniyeh)	Urban heat stress and flooding; dense vulnerable populations; high refugee presence; overstretched referral and PHC services
MODERATE VULNERABILITY	South Lebanon	Heat and localized flood exposure; moderate poverty; comparatively stronger service coverage than peripheral regions
	Mount Lebanon	Lower climate sensitivity; stronger infrastructure and institutional capacity
LOWER PRIORITY / NOT RECOMMENDED	Nabatiyeh	Climate variability present; lower displacement pressure; better adaptive capacity relative to Tier 1–2
	Beirut	Urban heat exposure but highest adaptive capacity and service density nationally

CVI logic: Exposure : Floods + heat Sensitivity : Extreme poverty, rural isolation Adaptive capacity: Minimal

Site selection: Akkar Governorate

- During the latest stakeholder engagement trip, the Akkar governorate was suggested as a potentially viable area for SAHA interventions in Lebanon. There was **wide stakeholder consensus** that Akkar would be an appropriate entry point for SAHA.
- The Akkar governorate is Lebanon's northernmost and one of Lebanon's **most climate-vulnerable and underserved governorates**.
- Akkar's PHCCs serve a large **vulnerable Lebanese population** and a high concentration of Syrian **refugees**.
- Akkar's varied geography exposes it to a **full spectrum of climate impacts**, from wild fires to heatwaves to flashflooding to coastal erosion.
- SAHA's assessments and interventions in Akkar would build on a joint **AUB/WHO study** on the vulnerability of all 43 healthcare facilities in Akkar governorate to climate. Akkar was selected for this study as a climate-health vulnerability hotspot according to UN-ESCWA.





LEBANON TIMELINE & NEXT STEPS:

Next Steps

- **Technical Working Groups:** Establish country level thematic WGs to co - design and validate proposed interventions
- **Hire technical focal point**
- **Conduct on ground assessments in Akkar**
- **Desk and literature review**
- **Stakeholder Engagement and technical studies:** Feasibility Study - ESMF - Gender - Legal Framework







FEEDBACK & KEY INSIGHTS SHARING

SAHA



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THANK YOU FOR YOUR INPUT

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Adaptation for
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