



Climate Change and Health

*Climate Investment Funds – World Bank Group:
Health, Climate and Environment Program (HCEP)*

Wednesday, June 22, 2022



Climate and Health Collaboration Overview of Partnership



Climate Change
and COVID



Climate and
Health
Vulnerability
Assessment
(CHVA)



Climate and
Health
Economic
Valuation Tool
(CHEVT)





COVID-19 and Climate-Smart Health Care

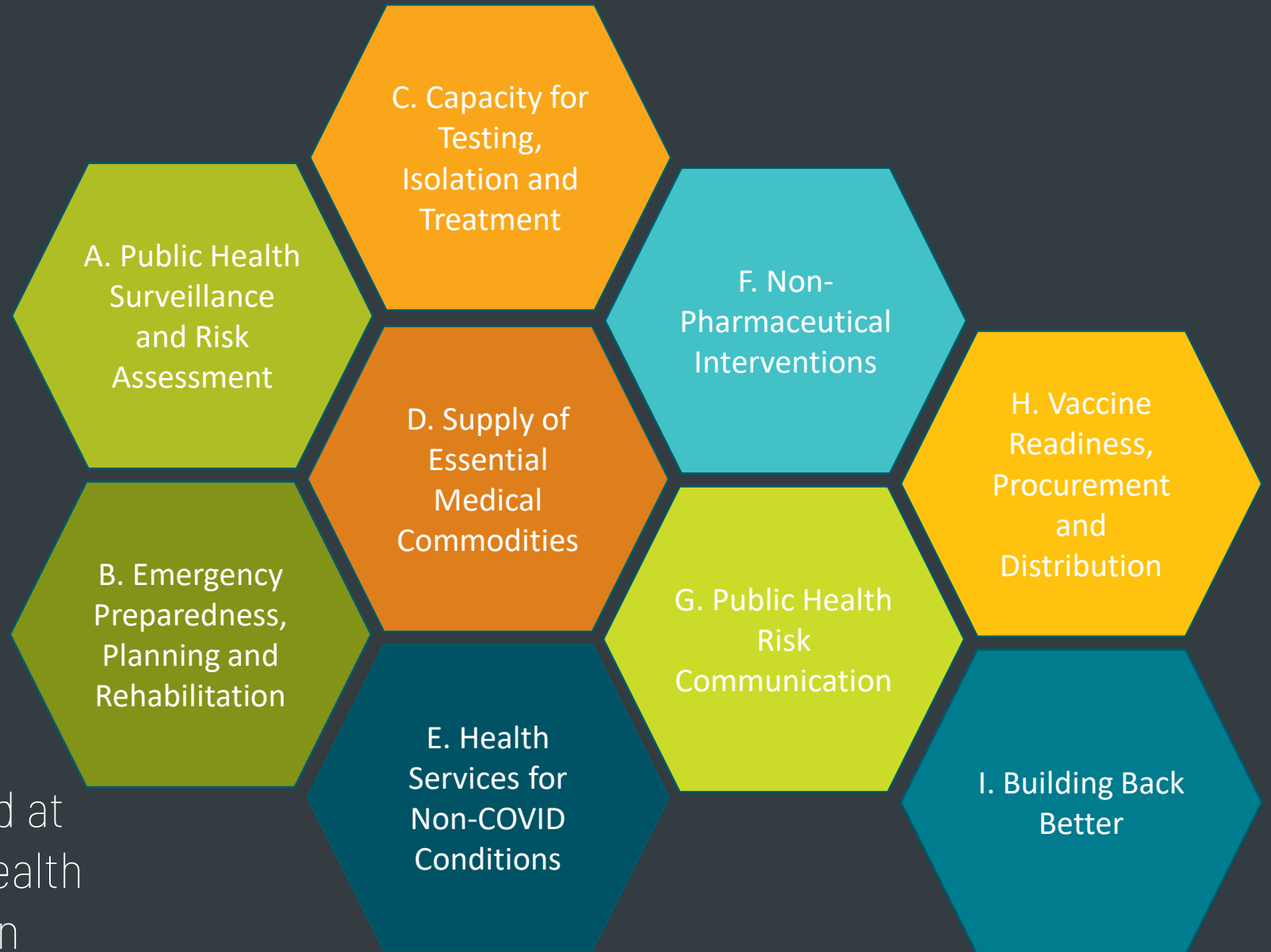
Health Sector Opportunities for a Synergistic Response to the COVID-19 and Climate Crises

A Menu of Interventions

for Adaptation and Mitigation



Launched at COP26 –health pavilion



Importance of the COVID work to MDBs/WB

Practical examples of synergistic applications of responses to the COVID-19 and climate crises*.

South Sudan: Solar Direct Drive Refrigerators (SDDRs).

Sao Tome and Principe (STP): Solar powered cold chains

Comoros: Solarization of Health Care facilities (HCFs)

Zambia and Ethiopia: Road maps to climate friendly cold chains

Nigeria, Angola, Malawi: Energy efficiency assessments of health facilities

Madagascar and Burundi: Operationalization of health system sustainable energy approaches**

* Examples provided are from collaborative work with the Energy Sector Management Assistance Program (ESMAP) in Africa.

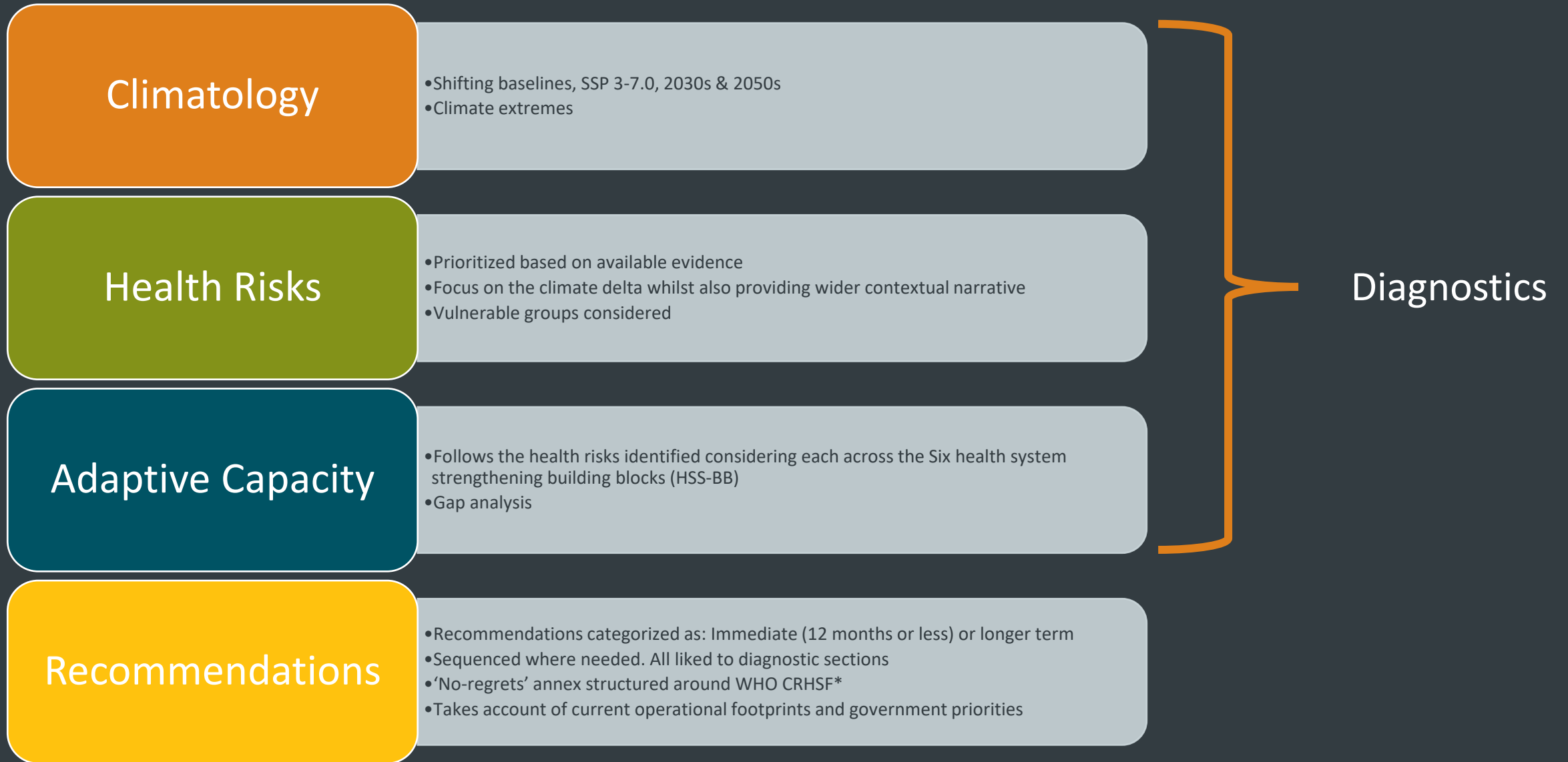
** E.g., Training health workers, M&E of systems, harmonizing health and energy sector systems



Climate and Health Vulnerability Assessment (CHVA)

Country Level Assessment of Climate Exposure, Health Risks and Adaptive Capacities

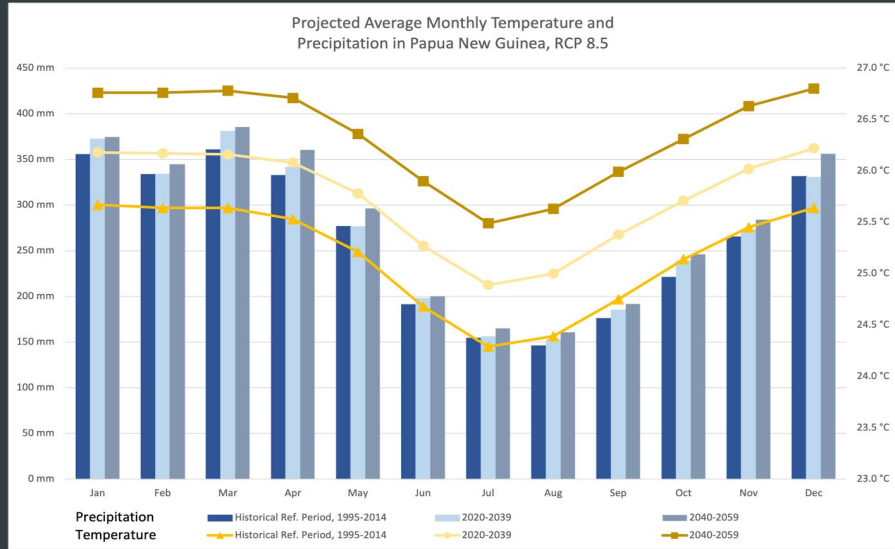
CHVAs follow a step wise approach



*WHO CRHSF: World Health Organization's Climate Resilient Health Systems Framework – 10 components mapped to the 6 HSS-BBs

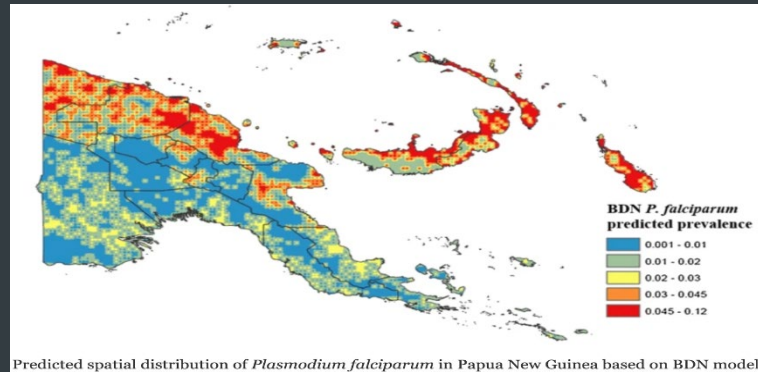


PNG CHVA



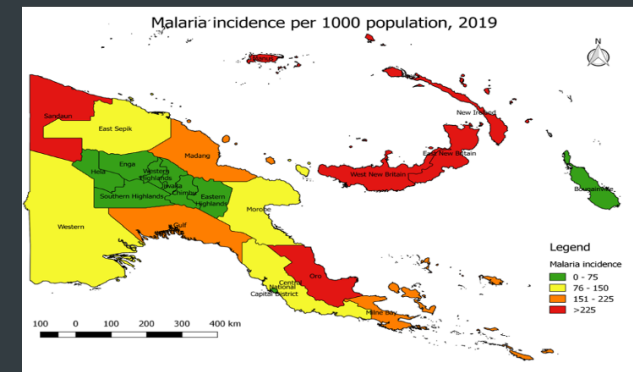
Malaria

Plasmodium distribution

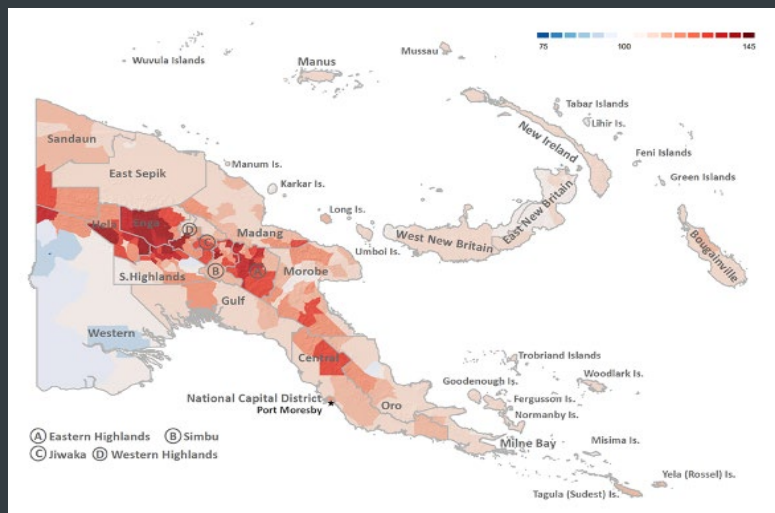


Predicted spatial distribution of *Plasmodium falciparum* in Papua New Guinea based on BDN model

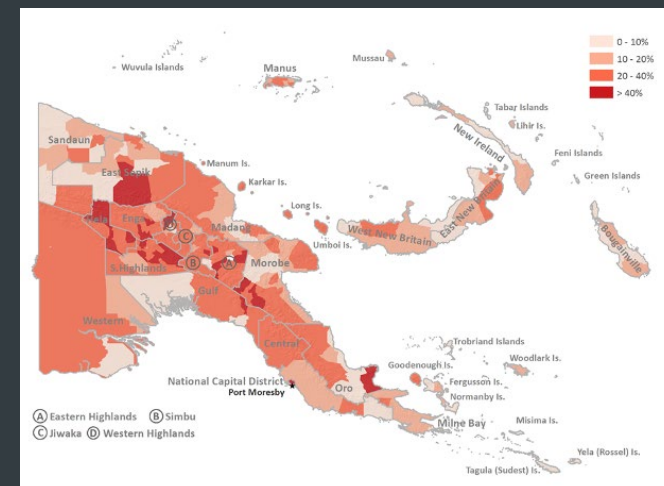
Disease incidence



Temperature anomalies 2017



Severe Food Insecurity 2017



Climate Exposures

- **Temperature:** cooler highlands most impacted, esp. by 2050s
- **Precipitation:** very high precipitation, ENSO => significant future uncertainty
- **Marine:** Sea level rise and ocean acidification key threats
- Key Hazards
- Extreme heat, Cyclones, Landslides
- Drought, Wildfire, Flood

Health Risks

- **Nutrition:** taro and sweet potatoes losses 13 and 11 % by 2050, Climate change is likely to adversely affect fishing practices,
- **VBDs:** Malaria vector spread to highlands
- **Heat:** high numbers of extreme heat days >35c in lower areas, tropical nights in highlands
 - **Mental health:** flooding and cyclones a particular risk

PNG CHVA

Adaptive Capacity

- National Health policies little detail on climate-health related needs
- HRH large urban-rural disparities and lack of technical capacity
- Early warning systems in development, but NDoH links limited
- Challenges for rural areas in times of extreme weather leading to service delivery fragmentation
- There is climate budgeting, but lack of available details

Recommendations

- Develop sub-national adaptation plans for climate change and health
- Develop educational and awareness raising materials and implement training for healthcare workers
- Track heat-related morbidity and mortality, as well as other climate-sensitive diseases, starting with Central, Gulf, and Western provinces, as well as the Highland areas
- Initiate pooling health funds to cover climate-related health risks

Emerging recommendations across the CHVAs

Based on Haiti, PNG as well as Pakistan, Sierra Leone, Malawi, Tanzania, Ethiopia, Nepal

Climate-resilient and sustainable technologies

- Integrate Climate adaptation in Health technology Assessments (HTAs)
- Climate-Proof Health Infrastructure and Technologies esp. building codes

Management of environmental determinants of health

- Strengthen knowledge on links between climate and environmental determinants on population health outcomes

Climate-informed health programs

- Engage community groups and leaders to support dialogue and development of prospective climate and health programs and policy options

Emergency preparedness and management

- Establish national risk register for climate-health risks with seasonal climate outlooks to inform health sector programming:
- Undertake contingency planning to include stockpiling and distribution plans to support disaster response.
- Conduct scenario-based simulation exercises

Climate and health financing

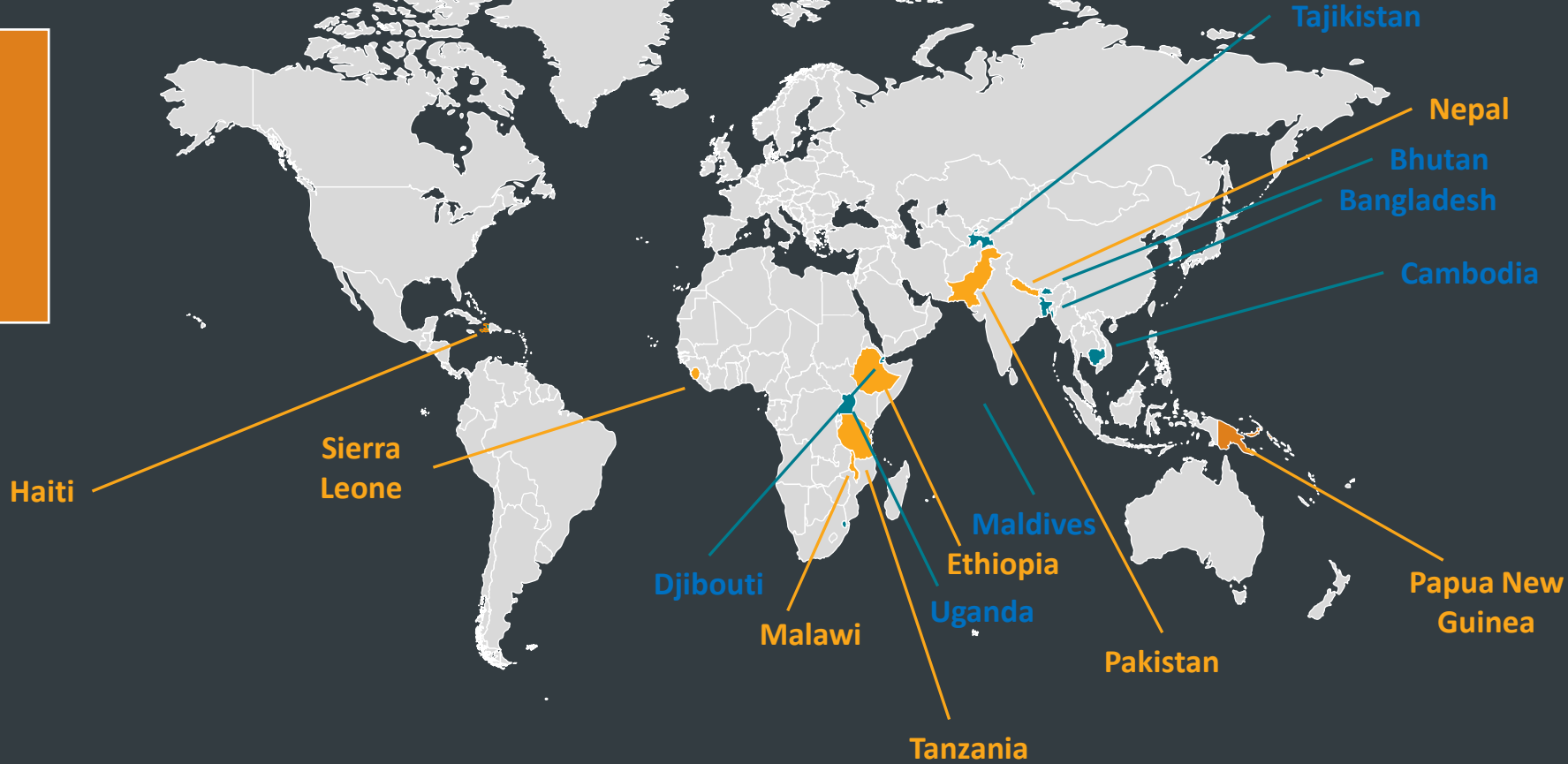
- Allocate a proportion of national health funding earmarked for adaptation and mitigation policies.
- Establish pre-payment mechanisms to provide financial protection for climate-related health impacts through pooling of resources.
- Include Climate Considerations in Strategic Purchasing by incentivizing health care providers to focus on climate-related health outcomes.

CHVA program

Levels of Vulnerability and Development

- NDGAIN
- HCI

- Completed or in progress
- Planned



Next steps with CHVA

First round

- Initial CHVAs supported by CIF
 - PNG, Haiti, Nepal – note other CHVAs also supported through methodology development
- Two rounds of methodology and process development

Second round

- Cambodia, Djibouti, Tajikistan, Mozambique, Madagascar, Uganda, Rwanda

Future

- Future CHVAs
- Strengthened client engagement
- Mission travel to strengthen country ownership, enabling prioritization of recommendations and client capacity building

Timelines

End FY22

End CY 2022

Potential applications of CHVA outputs by MDBs/WB

- Feeding into investment processes and client relationships – e.g. Systematic Country Diagnostics (SCDs) Country Partnership Frameworks (CPFs).
 - At WB the CHVAs have already been informing Country Climate Development Reports (CCDRs)
- Implementation guidance: Moving beyond advisory and analytic products. Examples of needed guidance/tools that CHVAs are expected to inform:

Climate-resilient Medical Waste Management (floods)	Guidance for risk communication on climate shocks	Identifying and targeting climate and health vulnerable groups
Training modules/curricular	Climate-Smart health financing, strategic purchasing*	Sustainable and resilient supply chains
Building codes and retrofitting guidelines for HCFs	Governance and mainstreaming climate in the health sector, multisectoral coordination of climate in the health sector	Disaster Risk Management (DRM): climate's role in seasonal procurement and prepositioning of physical and financial resources**, Early Warning Systems (EWS)

- Costing implementation guidance could become a critical role of CHEVT Phase IV (see later in presentation)

*E.g., indicator development of climate supportive RBFs, how climate can be reflected in mechanisms for Incorporation of climate in results-based payment formulae

**Public Financial Management are attuned to climatic considerations



A Climate and Health Economic Valuation Tool (CHEVT)

Quantifying Mortality, Morbidity and Economic Impacts of Climate-Related Health Impacts

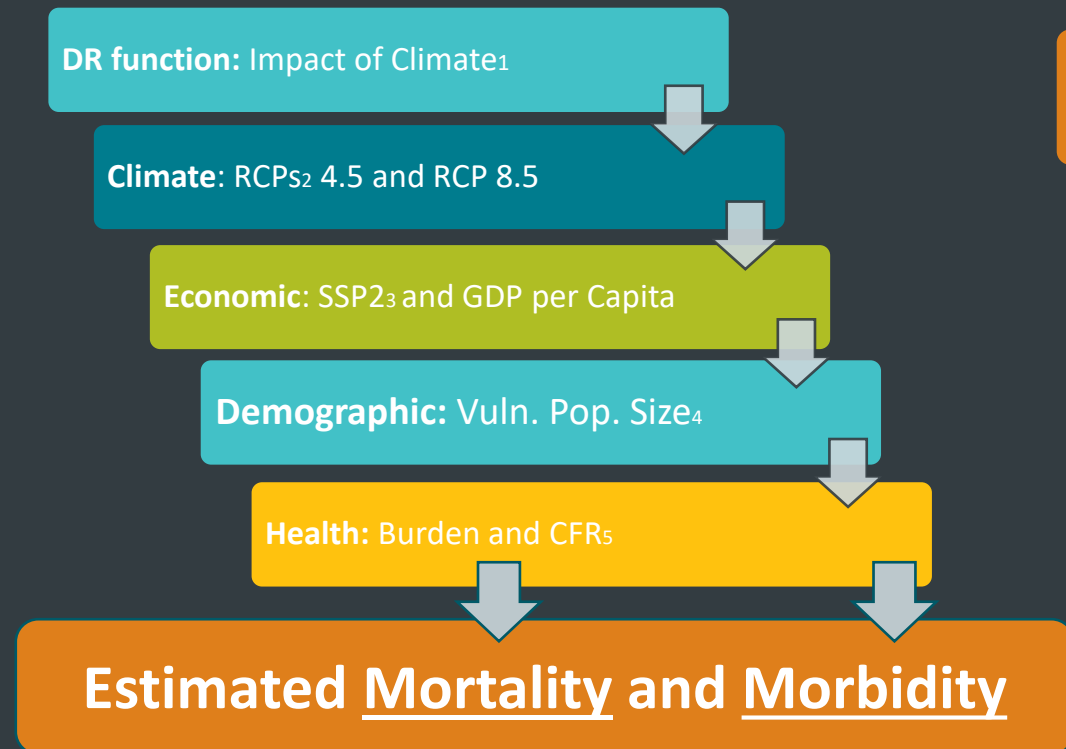
Development of a Climate and Health Economic Valuation Tool (CHEVT)

- Country Level as well as sub-national Focus
- Enable governments and Ministries of Health and Finance (MoH, MoF) as well as relevant agencies, to estimate health burdens and costs of inaction
- Provide baseline for further analysis of adaptation options – future Cost Effectiveness/Benefit analyses
- Key steps undertaken:
 - Literature Review
 - Tool Development
 - Country Piloting to around 15 countries
- Rationale for CHEVT development:
 - Population Attributable Fractions (PAFs)
 - Robustness and Credibility
 - Accessibility and Ease of Use

Methodology

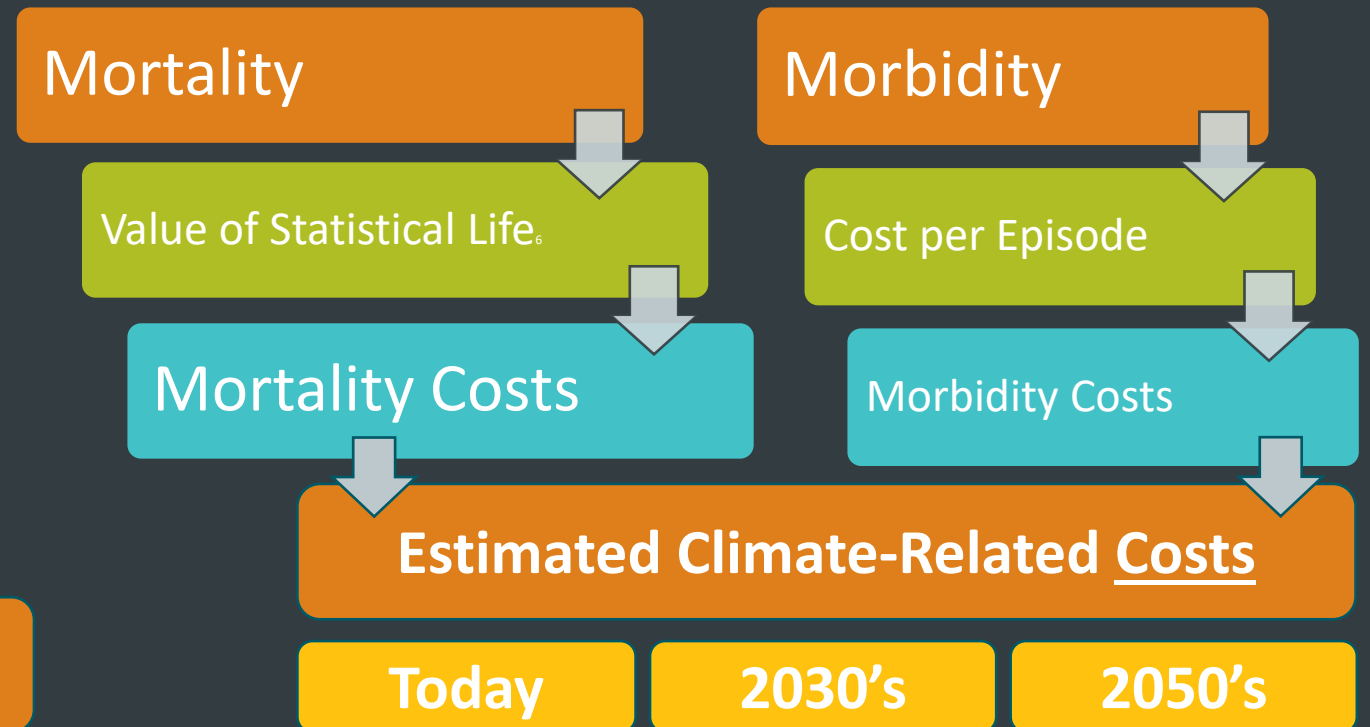
Step 1

Quantify Climate-Related Burden
Using Dose-Response (DR) Functions¹



Step 2

Quantify Monetary Value of Health Burden
VSL and Productivity Loss



1. For Malaria = Beguin et al, 2011. For Diarrhoea = WHO 2014 2. RCP - Representative Concentration Pathway, RCP4.5 best case scenario, RCP 8.5 likely scenario. 3. SSP - Shared Socioeconomic Pathways, SSP2 = mid-estimate. 4. National population size an future estimates from IIASA (International Institute for Applied Systems Analysis) sub-national figures from local data, assume proportional future change. 5.CFR – Case Fatality Rate. 6. Value of Statistical Life

Six Health Risks



Malaria



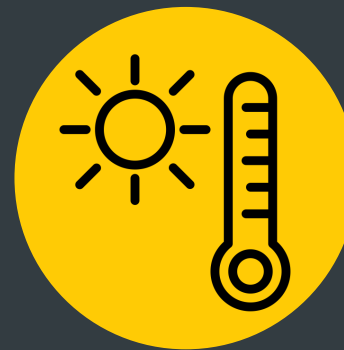
Diarrhoea



Stunting



Dengue



**Extreme
Heat**



Floods

Estimating the Cost of Inaction: Sample Output for Malaria

Regional Mortality Costs (US\$ Mn.)			
	2020	RCP 4.5	
		2030	2050
Balochistan	0.01	0.6	2.9
Federal Admin. Terr.	0.01	0.1	0.8
Islamabad	0.00	0.1	1.1
NW Frontier	0.01	2.1	12.4
Punjab	0.00	4.9	26.3
Sindh	0.01	2.3	11.5

Importance of the CHEV work to MDBs/WB

- Integrates a quantitative component into the CHVAs
- Could become an important tool for dialogue with ministries – both MoH and MoF
- Facilitates multisectoral dialogue using finance as a language
- Prioritization and assessment of magnitude of impacts across sectors
- Reassessment including revisiting baselines especially under Phase IV would enable monitoring and evaluation of climate-smart approaches.

CHEVT phased approach

Phase I

- Tool development – including peer review
- Operationalize tool for user operability
- Training workshops

Phase II

- Extend pilot up to 15 countries - focus on AFR and will include Egypt
- Present findings at COP27 – Synthesis report PMAC23*

Phase III

- Roll out to ALL countries – in collaboration with WHO/OECD (to facilitate global coverage)

Phase IV

- Cost of action – CE/CB approach

Timelines

Q1 FY23

Nov 2022

End CY 2023

FY24

Moving Forward

- Operational goal
 - To support CIF client countries in scaling up climate action in the health sector
- An incremental approach
 - Phase 1: development of diagnostics (CHVA and CHEVT)
 - Phase 2: application of diagnostics (Providing tailored TA to inform climate change action plans and health in NDCs, Costing adaptive capacity packages and supporting Paris alignment efforts)
- Towards COP27 (Nov 2022, Egypt)
 - (CHVAs) Feature cardinal country assessments
 - (CHEVT) First set of analyses of cost of inaction

Thank you

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