

Pathogen Archetypes

A framework approach to help
respond with agility to
enable equitable access

November 2025

Objectives of the Pathogen Archetypes Framework

What are the key Equitable Access challenges for current and future CEPI pathogens?

CEPI works with a **complex mix of pathogens** with varied Equitable Access challenges which require a **tailored approach to enable access**.

How can these challenges be addressed?

By understanding the **right balance of CEPI priorities** – i.e., where CEPI funding alone can support Equitable Access and where we need to target **catalytic and advocacy efforts**.

By clearly understanding and **articulating what CEPI does**, where it stops and where it anticipates transitions to partners (*expected to be defined further via end-to-end access roadmaps for each pathogen*).

What will it accomplish?

Speed of response to enabling Equitable Access.

Strategic problem-solving among partners on the Equitable Access needs and solutions for each pathogen.

Two criteria were selected to classify pathogens as they were determined to uniquely affect Equitable Access challenges across pathogens



- A** **Geographic footprint of the pathogen/disease – i.e.,**
- a. Outbreaks occur globally (HIC/MIC/UMIC and LMIC); or
 - b. LMIC only

This affects equitable access because it:

- Risks **equitable allocation** of doses towards LMICs
- Influences **whether vaccines developed are suitable for LMIC use** (e.g., presentations, populations, thermostability, etc)
- Affects **commercial viability & sustainability**



- B** **Demand predictability**
- i.e., ability to predict size/ frequency/ location/ volatility of outbreaks

This affects equitable access because it:

- Determines **supply shortage risks**
- Assesses need for **surge systems** to ensure rapid response for unpredictable demand
- Guides **ecosystem readiness** components and transitions needed in cases of predictable demand

Four archetypes were defined based on similar Equitable Access challenges

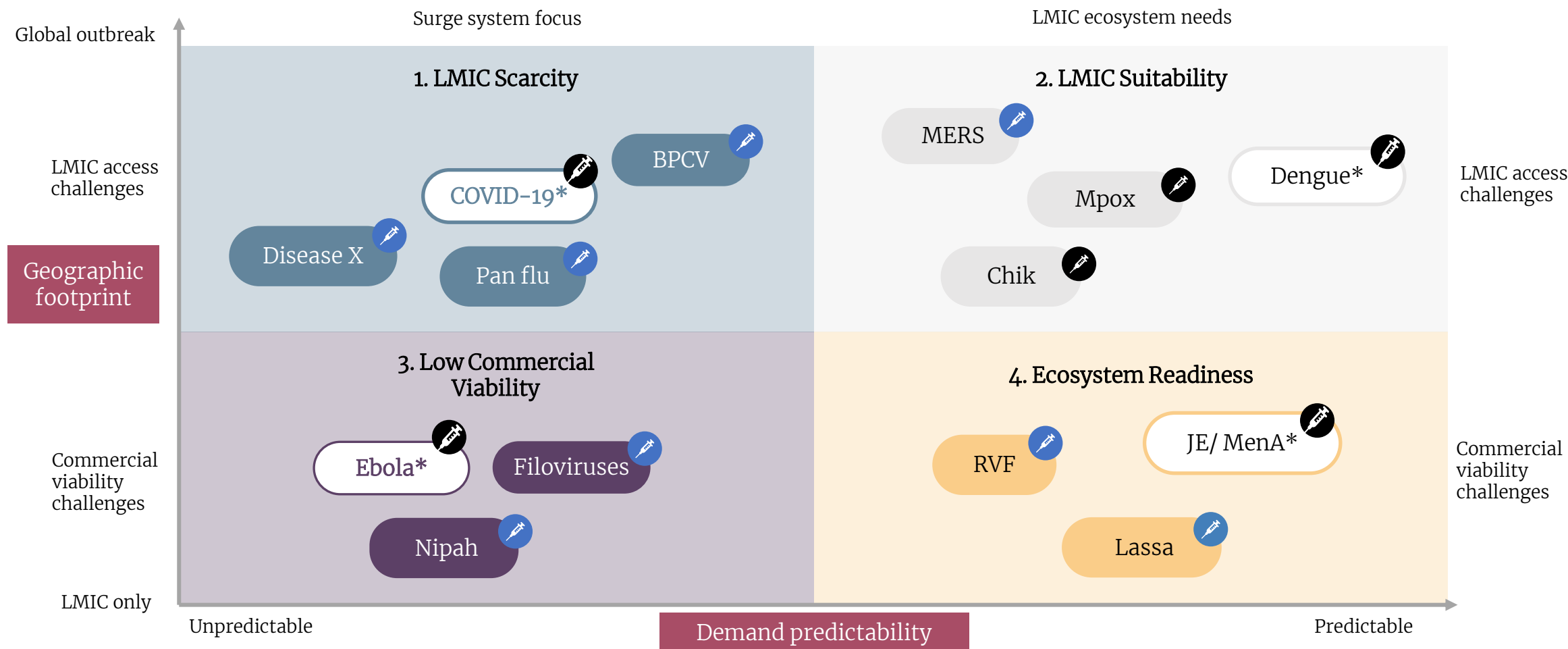
CEPI Priority pathogens	A. Geographic footprint	B. Relative demand predictability/ volatility based on frequency, size	Archetype classification	Key Equitable Access Challenge
Disease X	Unclear/ Global	Unpredictable/ highly volatile	1. LMIC Scarcity	<i>Outbreak creates rapid demand with little supply, causing actors with greater resources to hoard scarce supply</i>
Pandemic Flu*	Unclear/ Global	Unpredictable/ highly volatile		
BPCV*	Unclear/ Global	Unpredictable/ highly volatile		
MERS	Global	Mixed	2. LMIC Suitability	<i>Product designed for HICs and not suitable for LMICs, or less evidence/ understanding of disease epidemiology in LMICs</i>
Chikungunya	Global	Mixed		
Mpox	Global	Mixed		
Nipah virus	LMIC only	Mixed	3. Low Commercial Viability	<i>Lack of sustainability of supply due to low, sporadic demand in LICs & inability to access HIC markets which leads to fewer incentives to accelerate R&D. High COGs, prices and access risks in the absence of ongoing financial support</i>
Filoviruses	LMIC only	Mixed		
Rift Valley fever	LMIC only	Predictable	4. Ecosystem Readiness	<i>Need for low-cost vaccine to meet cost effectiveness criteria affects sustainability of supply. Multiple ecosystem partners and transitions are needed, creating complexity and access challenges in the chain</i>
Lassa fever	LMIC only	Predictable		

*Not a CEPI priority pathogen but included here for illustrative purposes

Based on existing evidence from the epidemiology and assumptions of the disease profile. Does not account for change or evolution of the disease, e.g. due to climate change (especially for vector-borne diseases). If a pathogen evolves into a Disease X (e.g., Nipah X), it is expected to move into Archetype 1 with associated challenges and needs.

CEPI Starts with the Problem in Mind – *by Identifying the Key Equitable Access Challenge*

-  Licensed product exists or planned
-  Vaccine not currently licensed



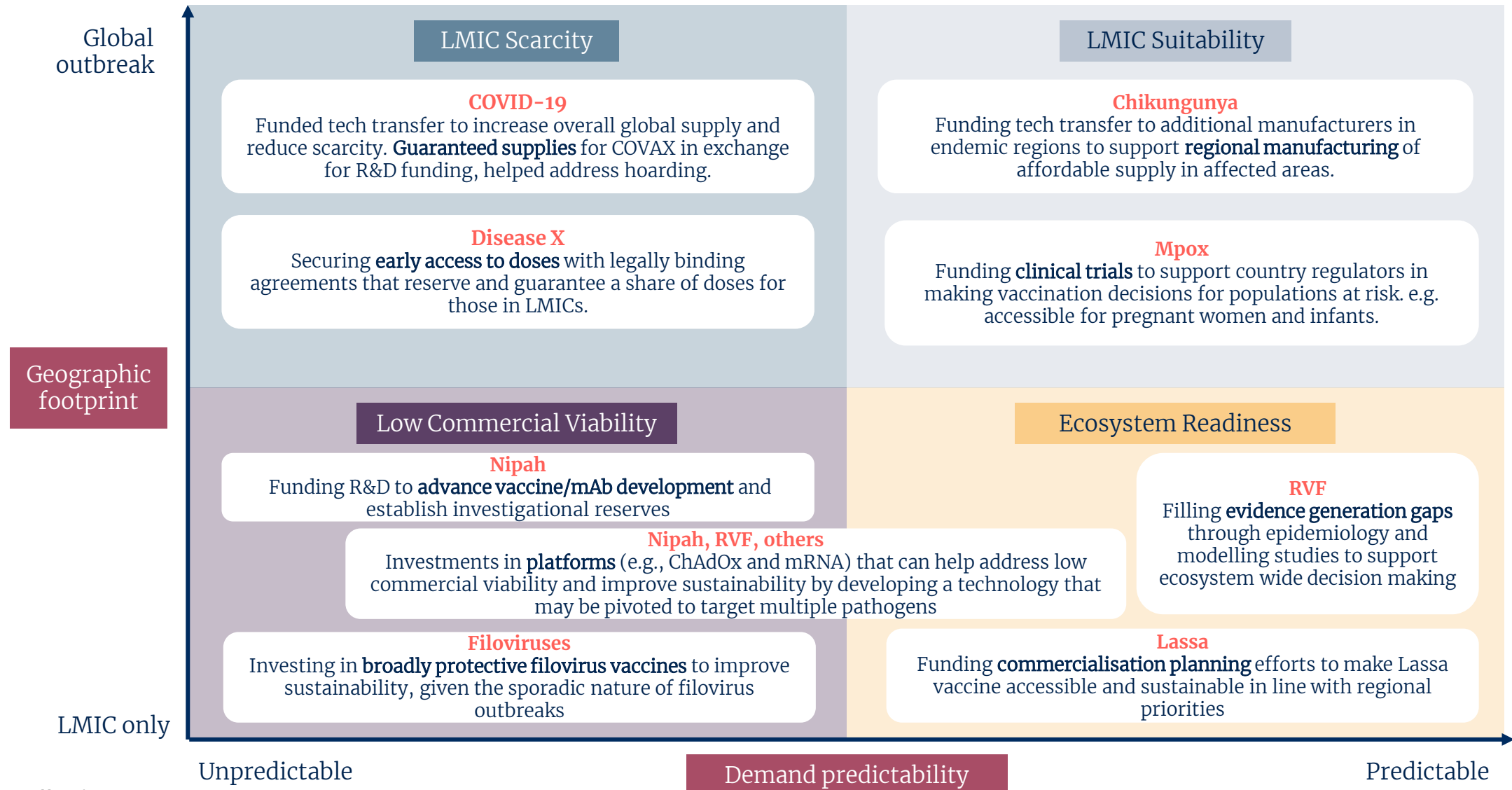
*Closest benchmarks

For certain pathogens across archetypes 2&3 there may be considerations of traveller's markets or biodefense stockpiles that may be for different indications. These can fit across archetypes 2&3 with similar EA challenges and solutions depending upon the context (e.g., hoarding by HICs, high prices, not LMIC ready, etc)

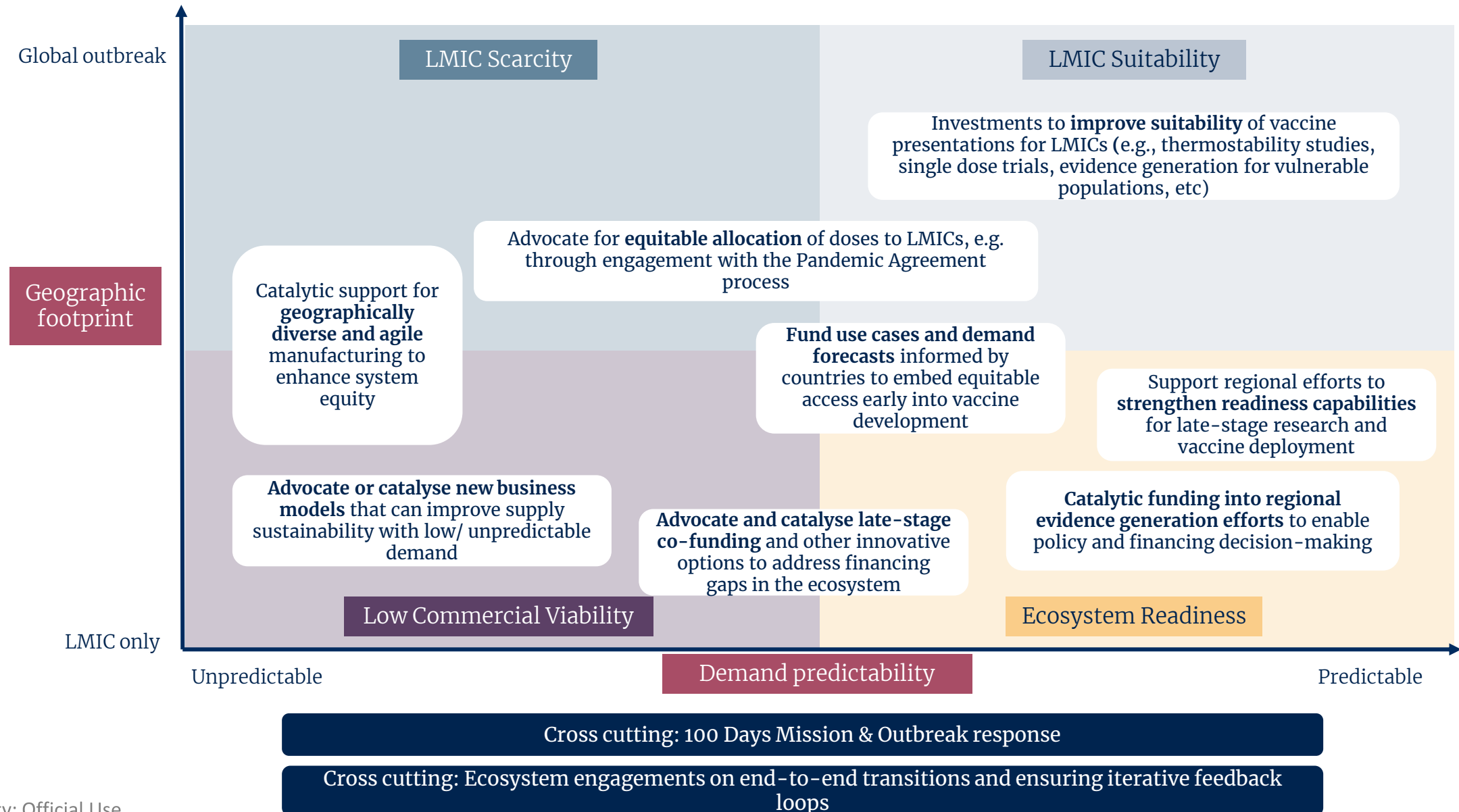
At a high-level, this approach can help guide how CEPI funds, catalyzes & advocates for each archetype (examples on next slide)

	1. LMIC Scarcity	2. LMIC Suitability	3. Low Commercial Viability	4. Ecosystem Readiness
Pathogens (exemplar)	Disease X, Broadly Protective Coronavirus Vaccine (COVID-19)	Chik, Mpox, MERS (Dengue)	Nipah, Filoviruses (Ebola)	Rift Valley fever, Lassa (Japanese Encephalitis)
Equitable Access challenges	Outbreak creates rapid demand with little supply, causing actors with greater resources to hoard scarce supply	Product designed for HICs and not suitable for LMICs, or less evidence/ understanding of disease epidemiology in LMICs	Lack of product availability due to low, sporadic demand in LIC & inability to cover margins with HIC markets leads to fewer incentives to accelerate R&D. High COGs, prices and access challenges in the absence of ongoing financial support	Need for low-cost vaccine to meet cost effectiveness criteria creates business risks & affects sustainability of supply. Multiple ecosystem partners and transitions are needed, creating complexity and access challenges in the chain
How CEPI can prioritise efforts to address unique Equitable Access challenges				
R&D FUNDING	R&D where needed and focus on pre-securing LMIC access to doses as well as ensuring that vaccines are designed for easy LMIC implementation (e.g., presentations). It is likely that given HIC needs, some of these are funded regardless of CEPI investments.	Licensed vaccines likely already exist so R&D funding will be strategic – i.e., if there are access gaps with the current portfolio and vaccines with different characteristics are needed.	Ensuring at least one (licensed) product exists that meets LMIC needs and is commercially viable – e.g., via low COGs or transformational innovations like platforms to improve economic viability and sustainability.	
CATALYSING	Surge systems to achieve 100 Days Mission especially given unpredictability of demand. Manufacturing readiness and agile systems that can enable supply in situations of extremely high demand.	- Ensure that evidence is generated for LMICs to ensure policy & funding decision-making. - Clarity on end-to-end access pathway and stakeholder transitions.	- Ensure fitting into existing surge systems to achieve 100 Days Mission, especially given unpredictability of demand. - Ensure that evidence is generated for LMICs on policy & funding decision-making.	- Ensure that evidence is generated for LMICs on policy & funding decision-making, and guide ecosystem activities. - Clarity on end-to-end access pathway and stakeholder transitions.
ADVOCATING	Especially for vaccines not funded by CEPI so contractual equitable access provisions cannot be included, advocate for equitable distribution of scarce/ available supply to/ among LMICs.		Early market signals from funders and ongoing financial support to ensure sustainability (reliable uninterrupted and adequate supply).	

Application 1: Examples of CEPI funding activities (not exhaustive)



Application 2: Examples of **catalytic funding** and **advocacy** activities for CEPI, outside of clinical development (not exhaustive)



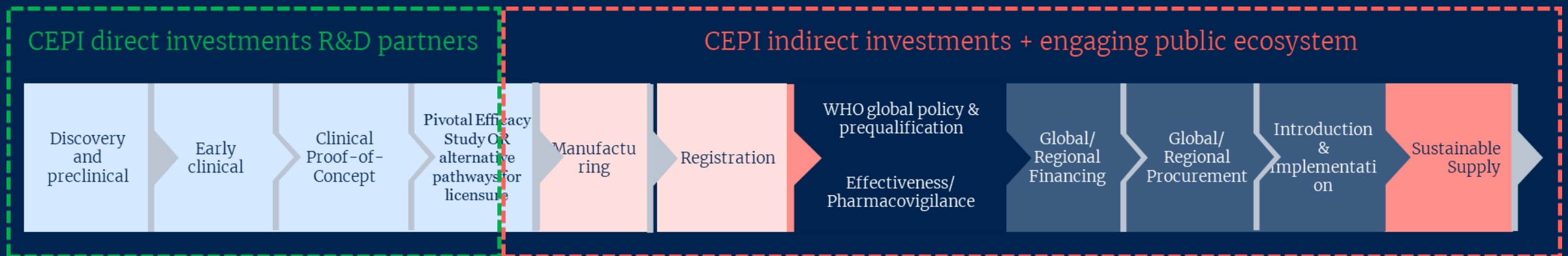
These strategic and archetype-level insights on equitable access needs will be translated into detailed end-to-end access roadmaps at pathogen level

1

These roadmaps will articulate how far CEPI goes for each pathogen and what it does to address the equitable access needs for each pathogen...

2

... as well as identify key remaining gaps and anticipated transitions to partners



CEPI