The financial sustainability of reaching zero dose children:

A scoping review and framework

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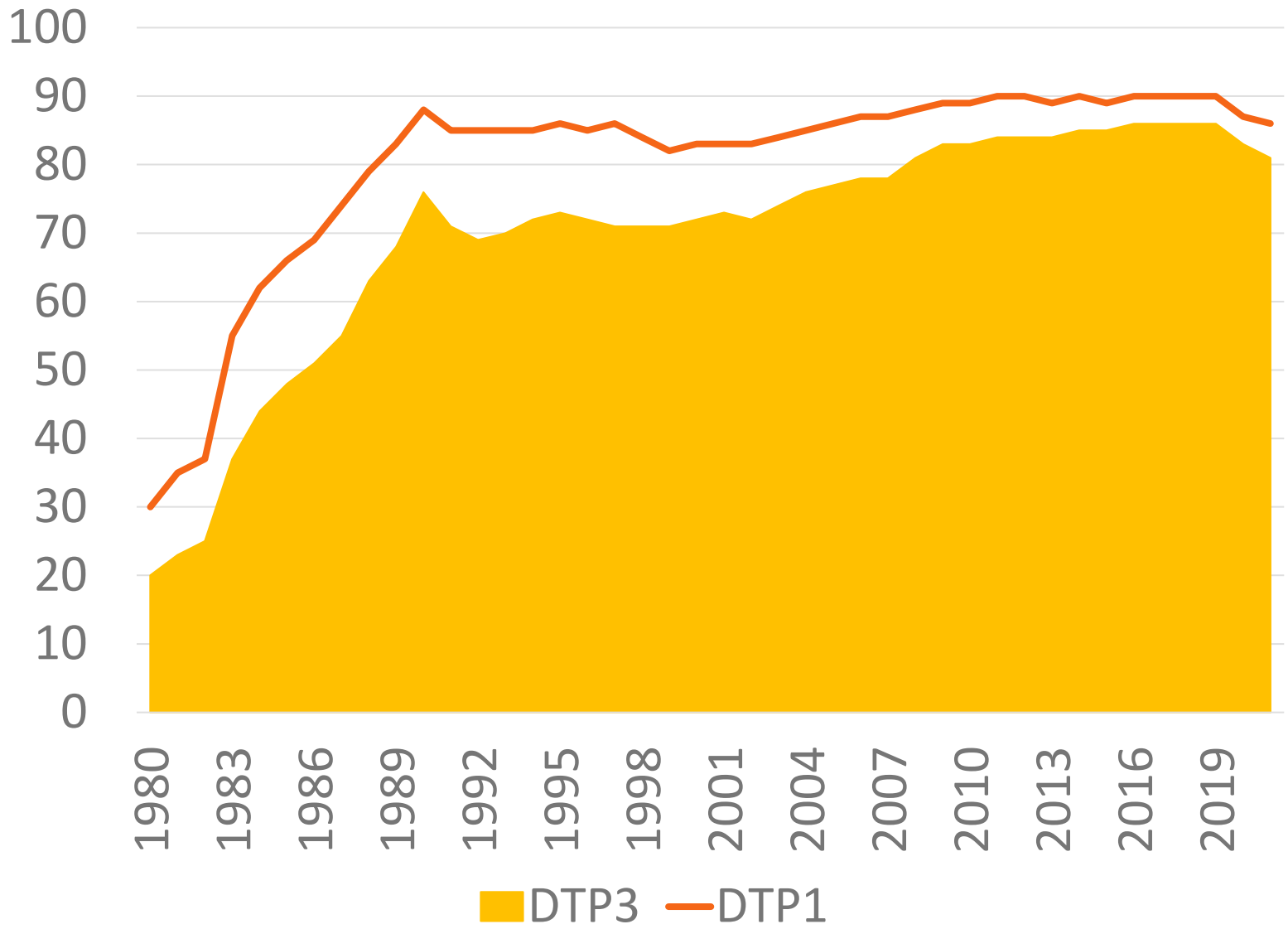
Background

Reaching the unreached: Zero-dose children & missed communities

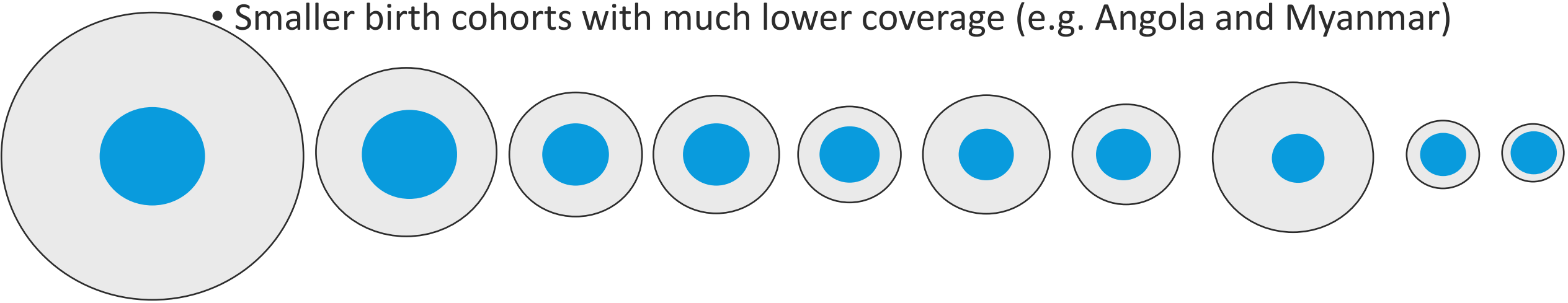
- Long plateau in immunization coverage
- New global focus on ‘zero-dose children’
- Zero dose children have not received any vaccines
- 18 million infants received no DPT1 in 2021 birth cohort
- Progress towards targets to reduce # of zero-dose children derailed by COVID-19 pandemic



Source: WUENIC 2021, July 15 2022 release

10 countries account for 62% of zero-dose children globally

- Angola, Brazil, DRC, Ethiopia, India, Indonesia, Myanmar, Nigeria, Pakistan & Philippines have the highest absolute numbers of zero-dose children
- Includes countries with:
  - Higher or moderate coverage but large birth cohorts (e.g. India and Pakistan)
  - Smaller birth cohorts with much lower coverage (e.g. Angola and Myanmar)



Who are zero dose children?

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Communities missed due to backsliding:

- Services previously reached these communities, but backsliding due to COVID-19 and other emergencies
- Recovery of health services required
- Fewer household surveys during pandemic; less known about the characteristics of these children

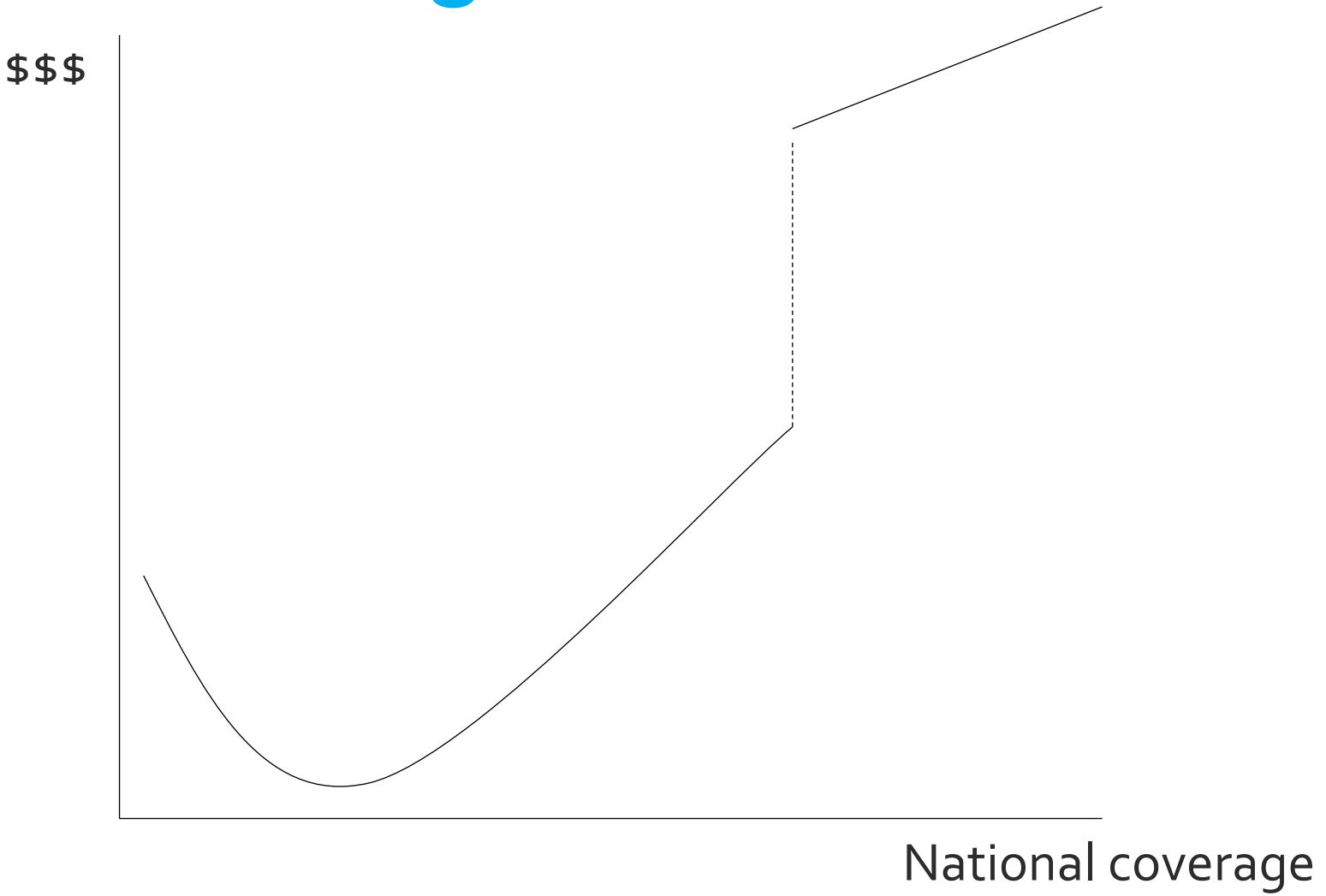
Communities excluded prior to pandemic:

- Primarily live in 3 contexts:
  - Urban poor
  - Remote rural
  - Fragile & conflict affected
- Households often have limited access to other essential services
  - Zero-dose status as a marker for lack of access to PHC
- Zero-dose children and communities often face multiple deprivations
  - Poverty
  - Gender-related barriers

Access to immunization is hindered by multiple barriers

	Rural remote	Urban poor	Conflict-affected
Availability	-No facilities located close to households -Lack infrastructure, staff, & commodities at facilities -Complexity of managing supply chains to last mile -Bottlenecks to financing peripheral facilities -Difficulties recruiting and retaining workers -Outreach challenging due to staffing issues, geographic barriers, and incomplete civil registration	-Unequal distribution of health facilities -Planning difficult due to lack of accurate data on population size due to rapid growth, seasonal migration, and insecure status in urban settlements -Limited outreach in urban areas -Sections of urban areas excluded from service plans due to lack of political will combined with overlapping and unclear jurisdictions -Siloed delivery of care leading to MOV	-Disruption to all components of health systems, including supply chains -Damage to facilities and other critical infrastructure -Displacement of healthcare workers -Difficulty planning outreach due to inaccuracy of administrative data, safety concerns, and complex negotiations with many actors
Affordability	-High prevalence of poverty -Vulnerability of rural incomes to commodity price fluctuations, weather shocks, seasonality -High direct and opportunity (time) costs of travelling to facilities -Time poverty due to burden of reproductive work to maintain households	-Poor households severely constrained in time and income -Long wait times at urban facilities -Inconvenient clinic hours for caregivers working outside of the home	-Economic crises exacerbate financial hardships -Travel more expensive due to increased direct and indirect costs due to fuel shortages, limited public transportation options, and rerouting due to security -Increases in the number of female-headed households increasing the burdens facing women and the opportunity costs of time -Dislocation of traditional support systems
Acceptability	-Lack accountability due to power imbalances between community members, healthcare workers and decision-makers -Marginalised groups in remote areas excluded from service due to negative perceptions or linguistic differences -Low maternal education -Lack of maternal control over decision-making and household resources	-Recent migrants have fewer ties to institutions and lost social networks -Unaware of where to access services -Fear of authorities in informal settlements -Cultural differences, language barriers, and experiences of discrimination can lead to mistrust -Rumors about vaccines can spread rapidly in urban environments	-Safety concerns deter care-seeking -Loss of trust due to mismanagement and weakening of traditional authorities -Lack of trust and suspicion of outsiders, leading to misinformation -Difficulties in care-seeking among mobile and displaced populations

Cost implications of expanding coverage



Higher costs of expanding access to zero-dose children and missed communities due to:

- Lack of existing resources (e.g. infrastructure; HR; etc)
- Need to address multiple barriers to access (multi-faceted interventions)

Adapted from: Kumaranayake, L. (2008). The economics of scaling up: cost estimation for HIV/AIDS interventions. *Aids*, *22*, S23-S33.

Methods

Systematic literature search + framework

Sustainability or transition + **Vaccines or immunisation** + **Finance**

Inclusion:

- Empirical assessment of financial sustainability (interventions or NIPs)
- Describes factors influencing financial sustainability (interventions or NIPs)
- All study designs
- N=27 studies included

Exclusion

- High-income countries; vaccines for livestock; vaccine manufacturing

Framework:

- Conceptual framework to measure financial sustainability of zero-dose interventions

Results

Very limited evidence of financial sustainability of zero-dose interventions

- N=2

<u>Example:</u>

- Integrated human and animal vaccination campaign in Chad (Akbar et al 2021)

  -Donor financed

  -Sustainability measured as **impact on district budget for health**

  -Incremental budget impact of 1 campaign: 27% of health district budget

Much more work on financial sustainability of NIPs

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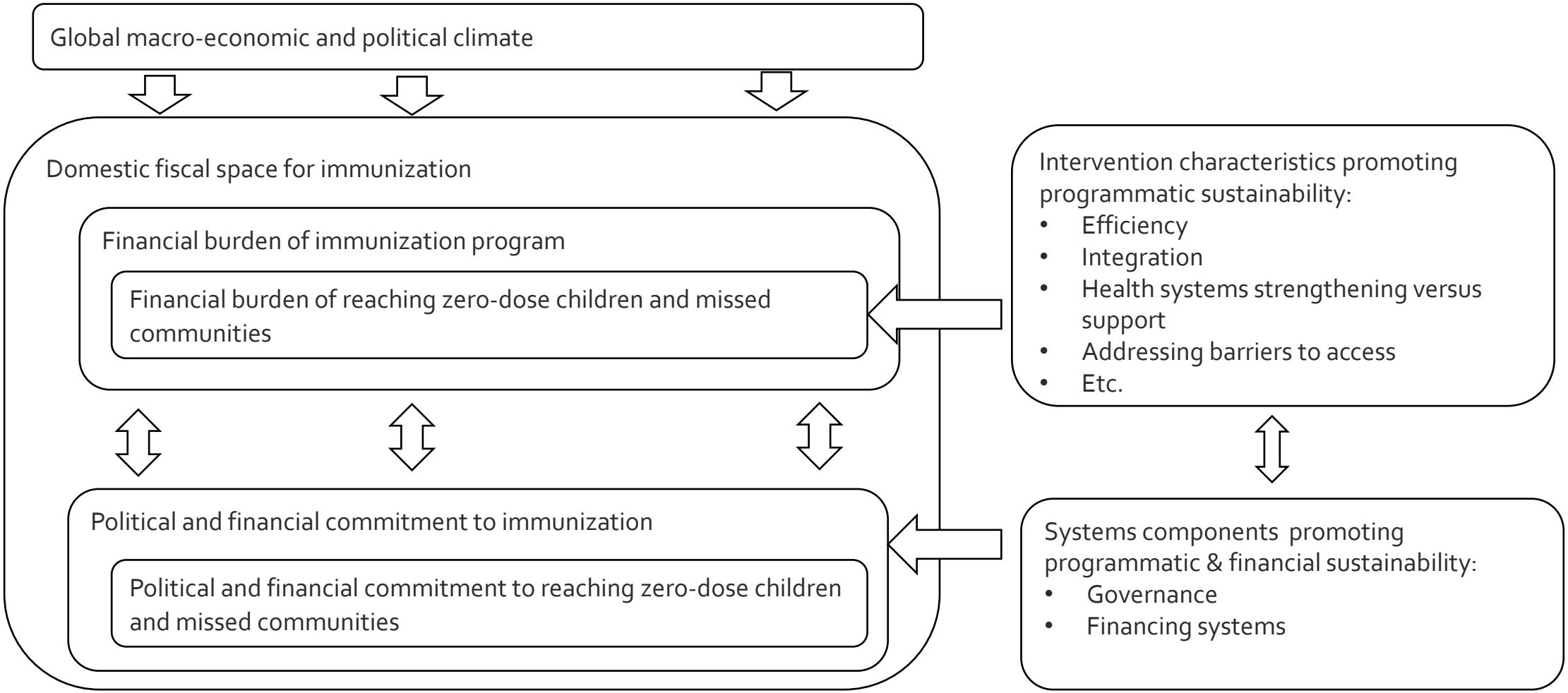
Domain	Indicator
Fiscal space	GNI per capita (Atlas or PPP)
	GDP growth; projected annual average GDP growth
	GGHE as a share of GGE
	GGHE per capita; GGE per capita
	Increased total (government + donor) expenditure on primary healthcare (PHC)
Financial burden of immunization programs	Vaccine cost as a share of GGE (at year of transition)
	Vaccine cost as a share of projected GGHE (at year of transition)
	Number of vaccines adopted with GAVI support
	Estimated total fertility rate
	Population size
	Birth cohort size
	Antigen wastage rate
	Drop-out rate
Political and financial commitment to immunization programs	Budget line for immunization
	Increased government investment in RI per child; government expenditure on RI
	Total expenditure (government + donors) on vaccines
	Increased total expenditure (government + donors) on RI
	Public coverage of vaccination expenditure; Government expenditur on vaccines; increased share of government expenditures on vaccine
	Has never defaulted on co-financing payments; Has fulfilled co-financing commitments by the end of the year or has paid arrears in full within 12 months
	Immunization budget execution rate; Implementation ratio of projected national or external funding
	Proportion of debt relief funds (HIPC) allocated to immunization
Transition dynamics	Increase in vaccine cost per capita during GAVI accelerated transitio phase
	Projected future country co-financing obligations

Framework for measuring financial sustainability of interventions to reach zero dose children



Discussion

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- Envision framework to be used for ‘light-touch’ vs ‘detailed’ analysis

- Ensuring adequate and predictable financing for zero dose interventions is not just about intervention costs

Thank you.

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