

RESEARCH BRIEF

DEVELOPMENT OF A FRAMEWORK TO IDENTIFY RESEARCH PRIORITIES FOR MITIGATING THE IMPACT OF CLIMATE CHANGE ON HIV RESPONSE IN INDIA



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Scope and Limitation of the Study

This comprehensive report has been prepared with the objective to map the available evidences on impact on climate change on HIV responses and identify key research priorities through an evidence gap - map approach. Since the consequences of climate change on prevention and management of HIV is indirect and multifactorial, our efforts are limited by the scarcity of primary studies particularly in India. However, based on available global evidence certain important and cross cutting pathways have been identified such as Food Insecurity, Migration, Service and infrastructure disruption,

mental health. All of these may be a consequence of climate change and driver of HIV transmission and responses.

Since any primary data collection was not included in the scope of the study, our study is limited by number of available literature in scientific databases/ public domain but it opens the scope to the various research communities for diving into evidence generation at much deeper level on the foundation of identified research priorities in various pathways between climate change and HIV response.



Climate Change and its Impact on HIV Response

Climate change (CC) manifestations, such as floods, draughts, cyclones, and wild fires, are being gradually felt by billions of marginalized communities, living in areas highly vulnerable to climate change. There is evidence of a dramatic increase in global average temperature, as that in 2022 was about 1.15°C above the 1850-1900 average, and prediction of rise up to 1.80C, in the coming four years. These climate changes lead to changes in the distribution and occurrence of climate sensitive diseases. impacting HIV response.

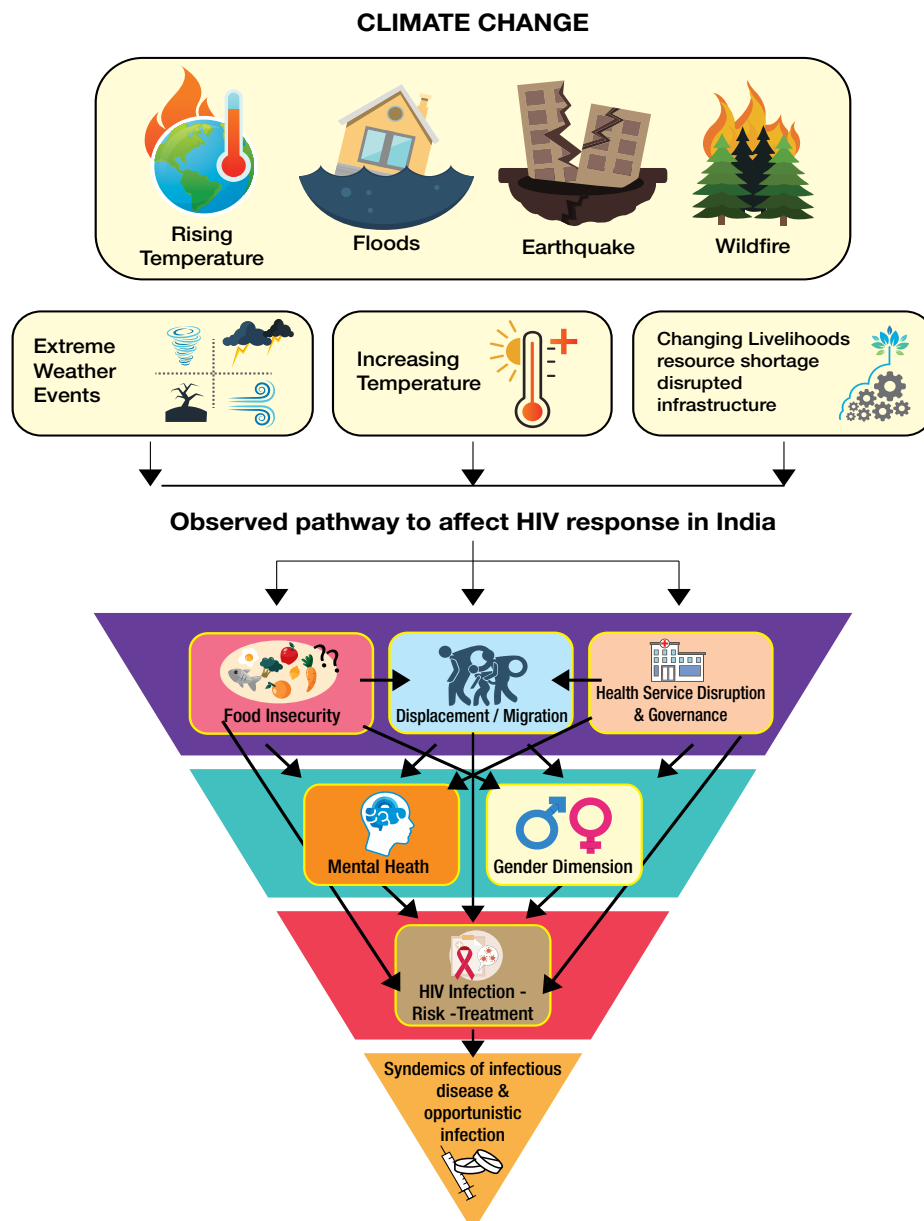
India is amongst the countries most vulnerable to impacts of climate change (CC). Climate change has already begun to alter growing seasons in India and with almost 50 per cent of Indians working in agriculture and other climate sensitive

sectors, the damage to productivity and health is substantial. India's population is also vulnerable to sea level rise, with 310 million people inhabiting low elevation coastal zone. Many Indians live in 'climatic hotspots', where changes in climate affect living standards. A recent rapid attribution study indicated notable heatwave related mortality in India. Notably, in the past five years, India's overall global rank in meeting Sustainable Development Goals (SDGs) has slipped behind many of the neighbouring SAARC countries. India's overall response to HIV/AIDS was successful in controlling the epidemic and it has been suitably documented. The National AIDS Prevention and Control Policy embarks at adopting a holistic approach, but so far taking cognizance of climate change and its likely impact on HIV response in India is not on policy agenda.

Objective of the Study

To develop a broad framework to identify Research Priorities for mitigating the impact of climate change on HIV response in India through evidence synthesis and consultation with Technical Resource Group Members.

Conceptual Framework of the Study



Conceptual study framework hypothesized from the understanding that Climate Change impact on HIV response in India is vertically influenced by Food insecurity resulting from deficits in crop and livestock, fisheries and forestry products, also mediating through mental health and gender issues; with linear linkage with displacement and climate migration pathway. Climate migration, owing to climatic extremities, posited second important pathway, where mental health and gender intermediated to impact HIV outcome. Governance of health system disruption as a result of climate disaster postulated a distinct pathway for overall effectiveness of state-specific HIV preventive intervention and continuum of care services in emergencies, with interceding mental health and gender issues, and linear influencing displacement and migration. The synergism of other Infectious Diseases with HIV conjectured due to immunosuppression associate with disease progression, with social and structural determinants, is illustrated sub-pathway influencing HIV response in India.

Climate Change (CC), Food Insecurity (FI), and HIV Response in India

In India, climate change is projected to affect both food security and the livelihoods of a majority of population who depend on climate sensitive sectors as, agriculture, forestry and fishing for livelihood. Production is projected to decline in tropical regions; and India being situated in tropical zone, the aspects of food availability, food accessibility, food utilization and food system stability will be adversely impacted. The same will also have an impact on human health, livelihood assets and food production and distribution channels, including production of commercial crops, lack of food grain market, income of the people, availability of drinking water. The climate change, agriculture productivity, food security, and poverty possess causal effect of injury and infection; as people during displacement-led migration are stressed to indulge in risky behavioural practices and consequently to contracting HIV infection. Also, lack of food can lead to power imbalances for girls and women in sexual relationship and result transactional sex, both of which increase an individuals' chance of contracting HIV infection. HIV/AIDS is considered to be both a consequence and driver of food insecurity – affect both in transmission of infection and also clinical

outcome of PLHIV.

Research Priorities Identified

- Evaluation of whether and the extent to which food insecurity may predispose to HIV transmission through mechanisms other than risky sex.
- Addressing factors contributing to experience of food insecurity in diverse HIV-infected population groups in both rural and urban resource settings.
- Assessment of the role of targeted food assistance and income generation programs in decreasing HIV transmission risk, particularly for women who appear to bear the greatest burden.
- Identification of the factors that contribute to food insecurity owing to climate change and its effect on HIV /AIDS response in a community before and after natural disaster – community-based trial (before and after comparison).
- Longitudinal data using scaled, validated measures that will permit a better understanding of the causal pathways and mediating factors between food insecurity and HIV transmission and how they are modified by gender.

Climate Migration and HIV Response in India

Climate change, a driving force of migration that is becoming more powerful, continues to cause millions of people globally to leave their homes every year. The 2021 global report indicated that 59.1 million people were displaced due to cyclones and floods worldwide. India is the fourth worst-affected nation globally when it comes to forced migration brought on by climate change, recently connotated as Climate Migration. Climate migrants in India can be divided into two types, first, those who are compelled to relocate from rural to urban regions as

a result of climate disasters in their original locations. Second, people leaving coastal areas due to slow sea level rise or an increase in the frequency of climate risks in coastal districts. Migration in India can happen due to several socio-economic and structural factors, as well. The forced migrations, both in transit and at destination, are faced with a variety of health issues, and existing health problems, before displacement, add to the intensity. Studies have shown an association between forced migration and depression, post-traumatic stress

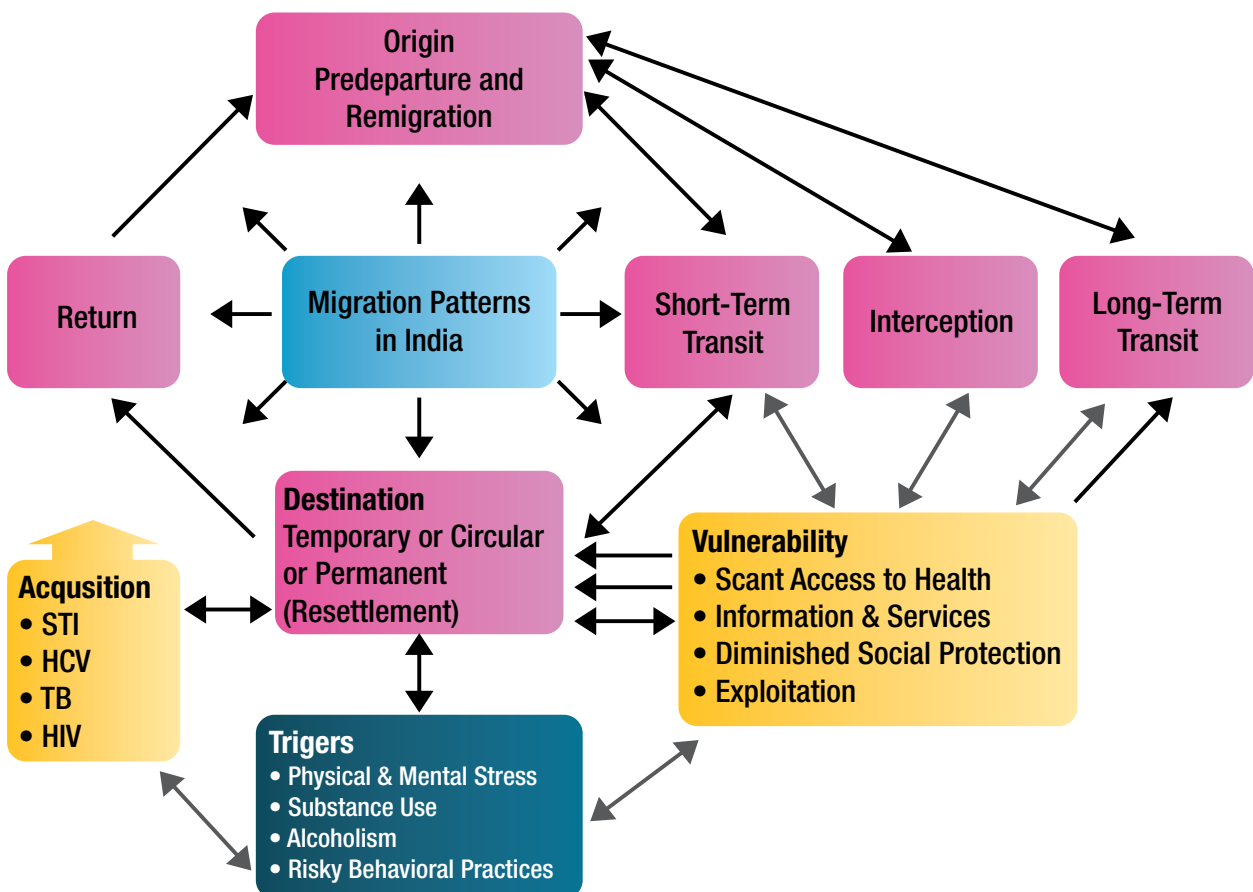
disorder (PTSD), and substance use disorders, with greater risk of sexual exploitation, human trafficking and sexual and gender-based violence and ultimately acquiring HIV infection. Migration process, evidently gendered, has a distinct impact on women and the third gender individuals. Additional threat of gender-based violence, both on women and third gender individuals, inflict on them physical and mental harms and expose them to acquiring HIV infection. HIV vulnerability does not correlate directly with migration, but significant correlation between migration and increased sexual risk behaviors and inter alia contracting HIV have been established. There is a complex interconnection between migration, the commercial sex locations and infectious diseases; for reasons of which commercial sex zones tend to come up in locations where there are large number of circular migrants, such as cities, border crossing points, construction and mining sites, plantations, tourist destinations and transport corridors. Studies have indicated that unprotected non-spousal sex, common among migrant workers, and among male out-migrants expose them to

increased risk of contracting HIV infection. Circular migration is considered as the bridge for spread of HIV from high prevalence urban locations to rural India.

Research Priorities Identified

- Mapping state-wise areas witnessing climate process (slow climatic process) and climatic events (sudden & dramatic hazards) leading to internal migration and environmental triggers that pre-dispose individuals to contracting HIV.
- Study on life-course perspective of climate migration and integration in HIV preventive intervention under NACP.
- Exploration of the structure of sexual networks in general population and the position of HIV positive individuals within these networks to infer HIV prevalence among migrants.
- Investigation of MTCT status in high out migration states.
- Assessment of the feasibility of NACP intervention along corridors of migration.

Migration & Vulnerability to HIV Acquisition



Climate Change, Health Infrastructure Disruption, Governance and HIV Response in India

India has been traditionally vulnerable to natural disasters due to its unique geo-climatic conditions that makes 68% of landmass susceptible to drought, 60% areas to earthquake, 40 million hectares to flood, and 8% areas to cyclone. India has witnessed 16 major natural disasters with 12 health emergencies due to epidemic outbreaks during 2009-19. These events, apart from health, also caused the public health infrastructure, including hospitals, (by way of structural buildings, etc.), non-structural (equipment and supplies), and external infrastructure (water supply, power, telecommunication, and transportation), damages. Of around 1.6 lakhs public health facility in the country, 54% of them fall in moderate to high-risk seismic zone. A notable transformation in the Indian landscape is the Gross Domestic Product (GDP) growth on the one side, and on the other, simultaneous emergence of unregulated urban growth, environmental degradation, inept sanitation and waste disposal systems. Disaster impact is not gender-neutral. The gender inequalities emerging from socioeconomic condition that exist are likely to be amplified in a disaster-induced social disruption, especially if gender is not properly understood as a factor.

Governance is currently required to encompass Green Health Care' initiative, through incorporation of environment friendly practices into healthcare delivery, on local scale within the walls of a health facility, research facility, or clinic, with green construction and operation that can protect patients, workers, and visitors.

India's policy response on climate change manifests itself in two forms: missions and programmes; and with the formulation of National Action Plan on Climate Change (NAPCC), that effected directional shift with equal climate governance. responsibilities bestowed on Centre and the States. The climate policy is spread across several policy documents, sector-specific strategies and laws that shape the energy landscape. Evidently, climate disasters, together

with a wide-array of climate-related changes, affect vulnerable population to HIV and potentially affect all aspects of HIV response in India.

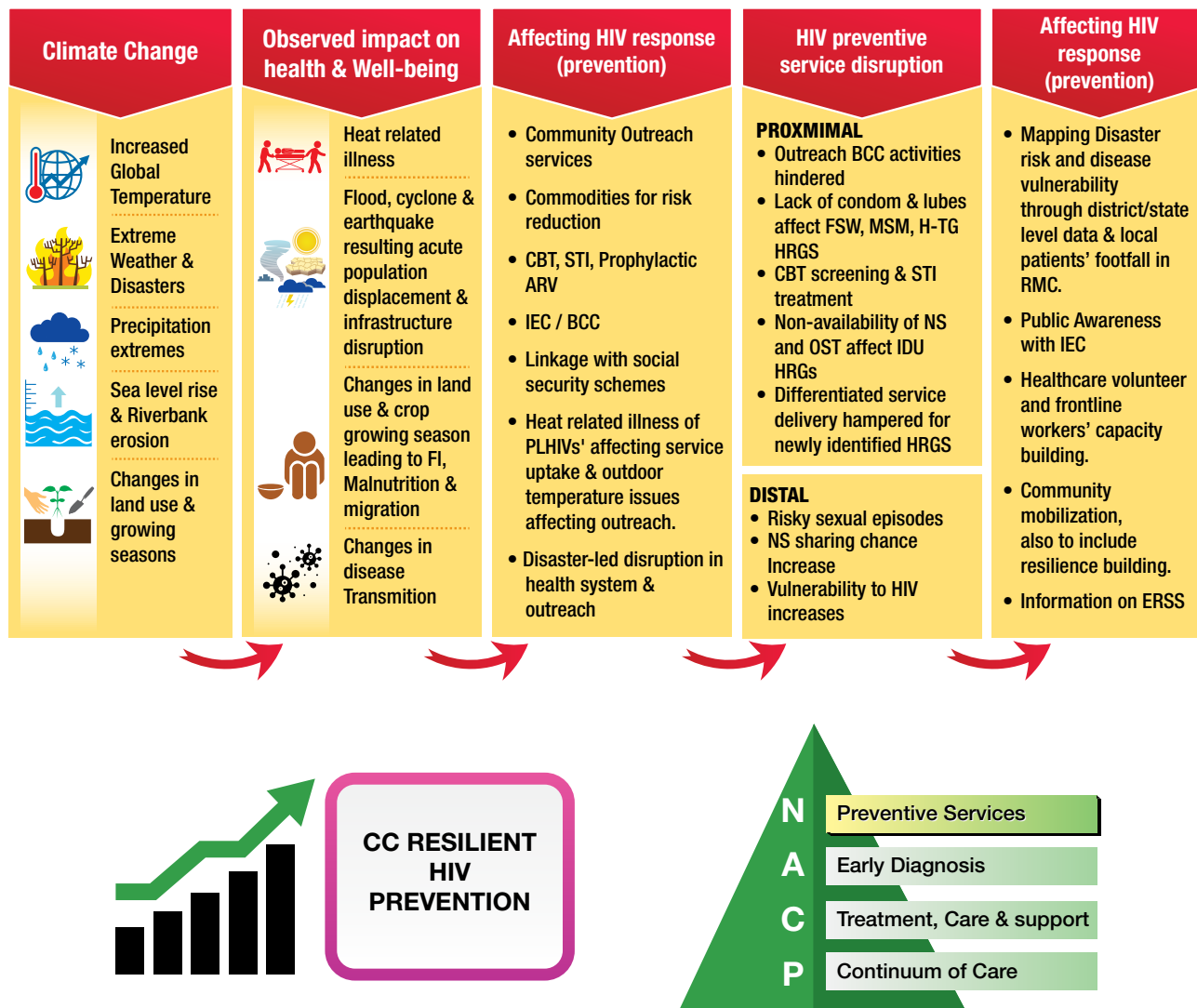
India's national HIV response has culminated through the National AIDS Control Program (NACP), that evolved methodically, with gradual integration of its programs with Government health systems (GHS); barring the targeted intervention and part of special group IEC and mainstreaming, that are implemented by CBOs/NGOs. The NACP had suitably responded to the recent pandemic crisis to successfully devise ART dispensation through the Home-delivery of medicines (where client consented or near-to-home dispensing) for PLHAs, and take-home dosing for opioid substitution therapy (OST) medicines for extend period allowed for People who inject drugs (PWID) Notably, suitable standard operating procedure (SOP) for supply chain management (SCM) of HIV/AIDS programme in India under NACP (was found to be in place, but unfortunately it did not have emergency supply chain plan. Also, no document on policy guidelines on disaster risk mitigation for its targeted intervention fields was available through the search.

Research Priorities Identified

- Identification of cost-effective and purposeful health workforce capacity building approaches (can be mix of physical and virtual) for future primary prevention of climate emergency situation
- Inquisition of best possible risk communication approaches for future pandemic/disaster situation – from the learnings of COVID-19 responses.
- Exploration of mechanism for decentralization of ART related diagnosis and counselling closer to PLHIVs' homes/residences.
- Cross-examination of feasible ART refurbishment models for provision of ART services to all PLHIVs under differentiated care services in climate sensitive areas.

Resilience – Focused HIV Preventive Intervention and Continuum of Care for People Living with HIV / AIDS in India

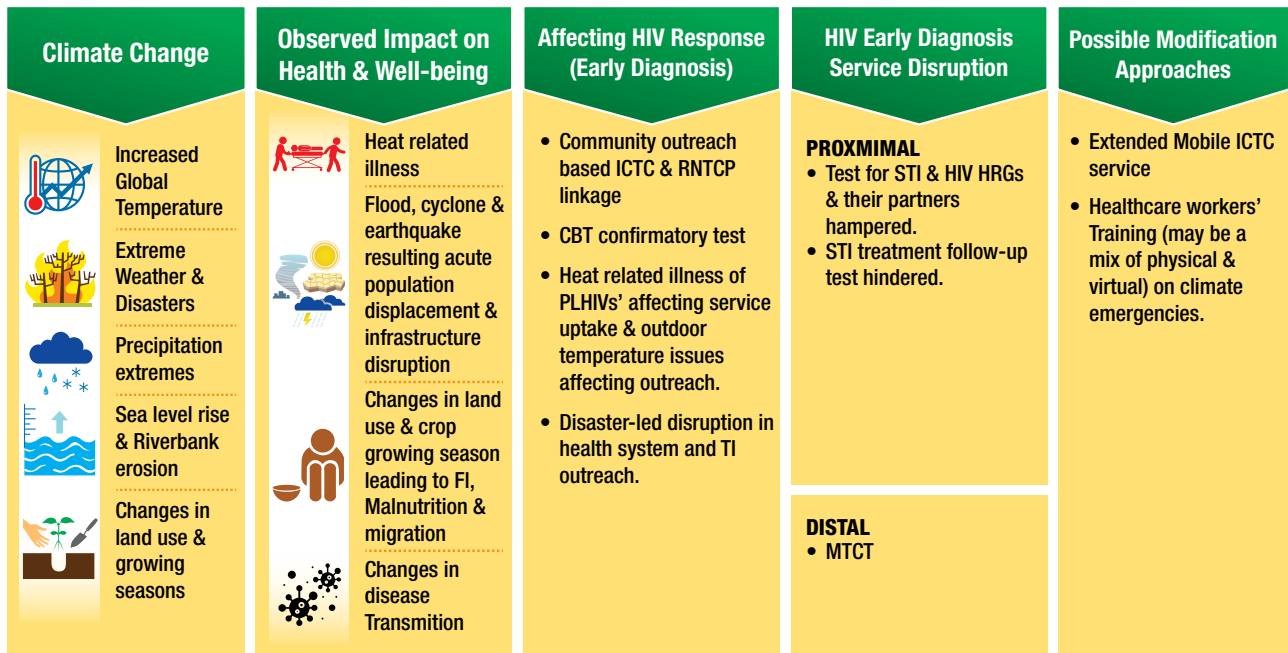
PREVENTION



Figure

Hotspot level climate vulnerability and adaption assessment with establishing and strengthening a dynamic community of diverse stakeholder and peer support strengthening is likely to ensure climate resilient outreach system for NACP.

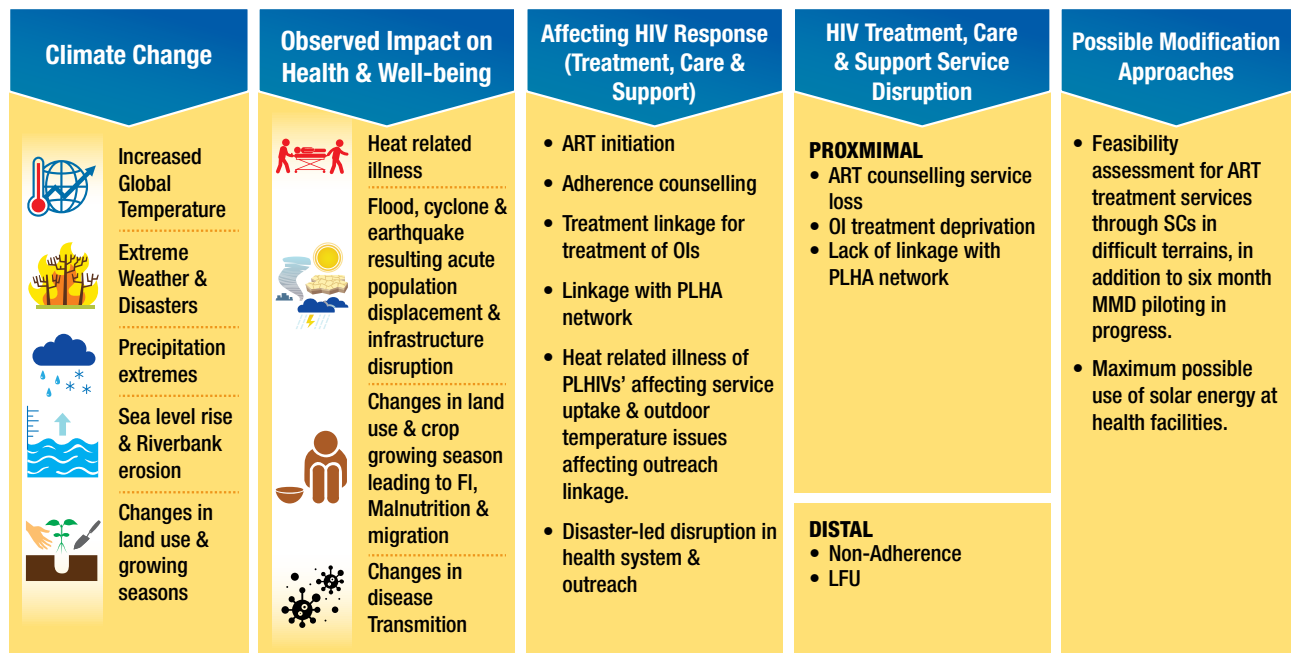
EARLY DIAGNOSIS



Figure

Reviewing health system fitness to meet the specific needs of climate extremities through digital data, differentiated service models, tele-consultation, developing a trained cadre equipped to boost understanding with health markers and mechanism with smart planning for stronger equity and justice.

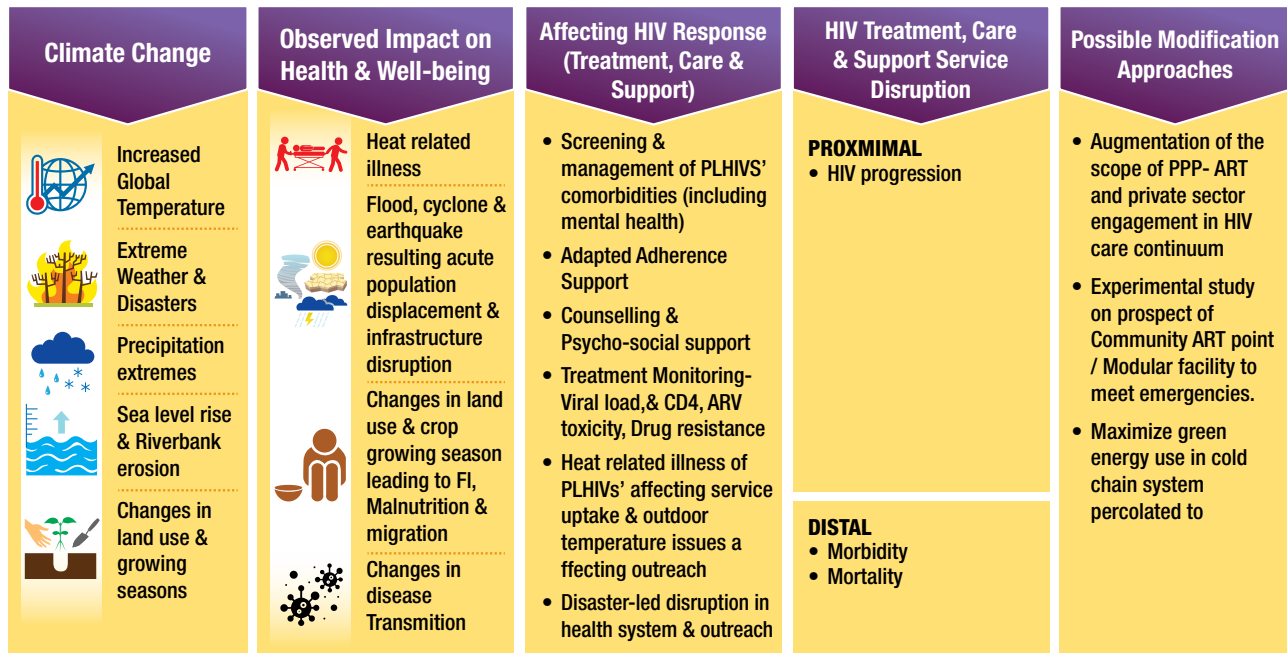
CARE AND SUPPORT



Figure

Resilience-focused HIV care and support might require adjustment in the traditional HIV care and support systems through incorporation of environment-friendly practices into healthcare delivery, on local scale within the health facility, clinic and patients' waiting areas.

CONTINUUM OF CARE



Figure

Resilience-focused HIV continuum of care require emancipation of health service providers through which individuals and families can be helped to develop resources in multiple dimensions of socio-ecological contextual levels as a multifaceted mechanism for adapting to and overcoming stressors and buffering social determinants of health (eg. Gender inequality, poverty) through internal (help in development of psychological strength, self-awareness levels and self-care), inter-personal (HIV related facilities, spirituality, social support systems), with overlap and some interdependence between levels.



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