Integrating Climate Change Lens into Health System from Community Perspective

A Case Study

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About the organization

PRAYAS is a non-governmental, non-profit organization based in Pune, India. Its health group (Prayas Health Group - PHG) focuses on public health issues afflicting the disadvantaged sections of society, through a community-centric, rights-based perspective. The thematic focus of the work is on HIV/AIDS, Sexual and Reproductive Health, Cancer Prevention, and the Health impacts of Climate Change. PHG strives to take scientific knowledge and evidence to communities in a simple, sensitive, non-judgmental, empowering, and effective manner and engages in generating evidence, building discourse, and advocating for evidence-informed public health policies and program implementations.

The health impacts of climate change are multi-fold and operate through a number of direct and indirect pathways. It is a complex challenge that requires flexible, locally acceptable, and community-centric adaptive responses. PHG seeks to understand the nature and extent of the health consequences of climate change in the Indian context and explore the relevance and effectiveness of health adaptation responses at the national and sub-national levels. (More details available on https://health.prayaspune.org/focus-areas/climate-change-health?layout=list)

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1. Background

Climate change is the largest threat to human health in recent times (1). The countries from Global South, like India, are particularly impacted by the health impacts of climate change. These include an increase in heat-related morbidity, respiratory illnesses malnutrition, injuries during extreme events, altering of the geographic range and seasonality of certain infectious diseases, diarrhea, mosquito-borne diseases, etc. To give some examples, a total of 3,775 deaths were reported due to heat-related illness in India during 2015-2019 (2) or nearly 12.5% of deaths in India can be attributed to air pollution (3).

Further, climate change affects the social and environmental determinants of health like disturbing food-producing ecosystems, air quality the safety of drinking water, and the security of shelter. The population from rural areas directly depends on climatesensitive sectors and natural resources for their livelihoods. When health impacts are assessed with an equity lens, climate-sensitive health risks are disproportionately experienced by the most vulnerable sections of the population.

India is gradually realizing the urgency to establish well-prepared and responsive health systems to combat health risks posed by climate change. The macro-level policy like National Program on Climate Change and Human Health (NPCCHH) drafted in 2018 is pioneering the healthcare delivery strengthening, through thematic action plans, convergence, advocacy and capacity-building initiatives. The individual state actions are also noteworthy, such as, Chhattisgarh state in India has solarised over 1,400 community health centres and pledged to attain 100% solarisation. This will help to reliably manage cold chains for medicines and vaccines. (4)

Strengthening health systems is one of the key health adaptation strategies. "People" are an integral part of a discourse about health system strengthening. Their role does not remain limited to being passive beneficiaries of programs. The landmark health system frameworks like the WHO Building Blocks framework advocate "people" to be at the centre of discourse. (5) In the case of climate change-responsive health systems, the role of people and bottom-up approaches must be explored. The health impacts of climate change are a complex problem, operating through many indirect pathways. If the systems are not responsive to people and don't integrate their voices and active participation, they are likely to fail. The systems, therefore, require context-specific, flexible, adaptive health responses. - demanding bottom-up approaches and active community engagement.

People's beliefs about how climate change would affect their health have been investigated among residents in both industrialized and developing nations. (for

example, 6-12) Still, there is a lot to be explored as climate change and health are constantly changing domains. Do people know about climate change? What are their daily life experiences associated with climate change and health? What are their experiences and participation with existing health system domains? Such questions are important if "bottom-up" approaches are to be developed to envision the climate-responsive health systems of the future.

With this premise, Prayas health group initiated the exploratory action research work in villages of Bhor block of Pune district, Maharashtra. The work is ongoing and nascent- one year old. It broadly aims to explore the scope and possible opportunities to integrate the climate change lens into village-level health systems. The present case study aims to reflect upon the account of work completed from August 2022 to March 2023 and disseminate the important lessons learnt during the process.



Fig.1 A glimpse of the health system structure in India including the village level

2. Case Research Question

This case study posed the central research question How can community-level processes and mechanisms enable the existing health system to integrate the climate change dimension?

The research question is primarily explanatory in nature. In the research question, the term "processes and mechanisms" imply the meaning of a series of events to produce the results, systematic interrelationships between parts and the actions through which changes manifest. The starting point for the research question assumes the positionality that there might be existing community-level processes and mechanisms within the health system, which need to be documented.

Currently, the bottom-up approach to strengthening climate-responsive health systems is inadequate in India to the best of our knowledge. For instance, a recentmost report about heatwave adaptation in India by the Centre for Policy Research identified that most heat action plans in India are not built for the local context and advocated conducting more localized holistic vulnerability assessments. (13) The present case study generates information "for policy" where the eventual case audience is the stakeholders involved in policy planning and implementation. The case study would also benefit community engagement components under NPCCHH action plans and advocacy.

3. Process

The approach

The process of the present initiative was planned partially. However, the process also emerged spontaneously in a "snowball" manner where one action or consultation with stakeholders lead to another one. The community perspective on climate change and health systems needs to be studied in real-life settings. A "naturalistic" understanding of the issue was required over "controlled" experiments. Therefore the "flexible" case approach was preferred with no tight pre-specifications. Multiple interpretations of the same experience were possible to be documented to enhance the knowledge about gaps. The context in which the health system currently functions was captured.

The case definition

The specific case here was defined as "the village communities as a part of the health system". The village community had a pre-defined fixed boundary however, its

interactions and interconnections with other sub-systems (like health sub-centres, health centres, anganwadis etc.) were taken into consideration.

The setting



Fig.2 Bhor block in the Pune district of Maharashtra state of India

Bhor block in the Pune district of Maharashtra state was purposively selected for pragmatic reasons based on the budget and time resources available with the research team. The Bhongavali Primary health centre from Bhor and three sub-centres (Health and wellness centres) under it, Nhavi, Sarola and Kikvi- have a total of 16 village communities under their catchment area. Out of these, 9 villages were selected for this exploratory initiative as units of activity. Two volunteers from a community-

based organization from the same location were selected. The training was given to both of them regarding Climate change & its health impacts. The training booklet prepared in simple Marathi language made by Prayas health group was used. These two were referred to as 'community level facilitators' between the villages & Prayas. Their roles were to go to villages, meet Sarpanch, Upsarpanch and other gram panchayat members, Village health & sanitation committee members & other eminent villagers, inform them about the initiative & schedule the next plan of action.

The Series of Actions



Fig. 3 The series of actions snapshot

Preparatory sharing learning dialogues with villages aimed at rapport establishment with villages. This also helped to identify formal and informal leaders, map stakeholders and also identify potential sub-groups with whom separate meetings can be conducted. It was also noted that basic information about climate change given in a simplified way was well received by the villagers and it was important to open the conversation.

The use of classic Participatory Rural Appraisal (PRA) tools in the Climate change & health system context was carried out in the follow-up meetings. The tools like listing and ranking, timeline, case vignettes, and village profiling were used. The process emerged in consultation with the villagers themselves. The dialogue also sometimes churned debates and conflicts within the village system which were facilitated by the research team. The dialogue also helped villagers to establish the connections between climate change, health and social determinants of health.

Action-oriented dialogues with villages reflected upon the adaptive measures through which climate-sensitive actions can be integrated into the existing health system. The potential of platforms and roles like village health action plans, VHSNC, and ASHA were understood for micro-level policy advocacy opportunities. It also attempted to develop a village action group of core members. Capacity-building sessions needed at the village level were identified.

Cross-learning & feedback conversations with other stakeholders were extremely essential to keep the momentum of villagers active and to complete the systemic loops. As and when needed, informal and formal dialogues with other stakeholders were carried out and relevant actions were initiated/ advocated by the Prayas health group.

Sr	Tool & Its Description	Purpose	Nature Of People's
No			Participation
1	Listing and ranking- climate and health concerns were located among the various village priorities	Prioritization	Facilitator asked relevant questions and probes while people listed and ranked their village issues by discussing among themselves and reaching to consensus

The glimpse of tools used during the program is as follows:

2	Timeline- mapping on a time scale of last 30 years the crucial events like weather events, disasters, local disease trends, social changes etc	Developing a temporal perspective	Facilitator provided the timeline frame of past, present and future while people narrated and organized their local experiences
3	Case vignettes- the local evidence case of climate or health events was used as a vignette probe to generate the discussion and learn lessons	Shifting the understanding from general to specific and theory to action	Facilitator learnt from the local experience, developed a hypothetical pictorial case study and presented it to people. People discussed, shared opinions, debated and derived the action-oriented messages from it
4	Village profiling- the profile focusing on climate events and health system was generated contextualized to the village	Driving the action plan for village and associated health system	Facilitator provided the initiators and probes, people participated by sharing local village experience, challenges with health system, possible actions required etc; facilitator collated the understanding and handed over to village leaders as an advocacy tool







Timeline mapping process in one of the villages

Sub-group meetings with women & marginalized group participants





Vulnerability mapping emerged after village dialogues- a ready-made tool for village panchayat Pictorial charts to explain climate change in a simplified manner

The quantum of work covered in an ongoing initiative to date

Coverage area	The initiative is impacting 9 villages covering 9000+ population
Village-level dialogues and cross-learning conversations	A total of 30 dialogues have been carried out pitching approximately 350 individuals

Contribution of the programme in delivering better health outcomes & Learnings from the activity

Learning 1 People can play an active and crucial role in climate-induced health vulnerability mapping

People cannot be viewed as passive beneficiaries of any top-down program. They do not necessarily need an outside "spoon-feeding" of climate change and health-associated knowledge to be shared with them in a "one-sided" manner. Contextual vulnerability can be extracted from the lived realities of people. However, it must be noted that people might need anchors/ interconnections to view climate and health systems as a whole. Such a collaborative exercise can help to map the local vulnerability and generate a set of micro-scale adaptive capacity actions.¹

Box-1 Caution if you have diabetes-hypertension and if you are working in extreme heat...!!!

Case (a)- In March 2022, Sumatibaai from Divevadi village followed her daily routine and went to accomplish her agricultural work. The afternoon heat was at its peak. After a day-long work in the field, 59 years old Sumatibaai felt dizzy and fell. Sumatibaai was diabetes and hypertension patient. Her daughter-in-law gathered people, they make Sumatibaai drink water and took her home. The evening she again started feeling restless. The private hospital was 8 kms away. Sumatibaai was admitted there but after an hour, she expired due to cardiac arrest.

Case (b)- Diwevadi village witnessed a death in another family in the same month and followed a similar pattern. 63 years old Ram Bhau was also a diabetes and hypertension patient. He postponed drinking water when he was occupied with daylong agricultural field work. When he returned home by evening, the symptoms like headache, fever and disorientation popped up. His demise occurred when he was taken to the hospital.

The Diwevadi villagers were uncertain whether working in extreme heat caused these incidents but they have determined to take extra care of elders in their families during summers henceforth. Facilitators planned to conduct a heat-stress prevention training for the villagers.

seasonal flu among children, polluted air in villages near the national highways.

¹ All the names of villages and individuals in this case study have been anonymized as an ethical protocol

However, facilitation was needed to "join the dots" and make the links between health issues with climate change more visible to the people.



Takeaway for program implementing agencies/ policymakers-

Mapping contextual vulnerability was an immediate outcome of this process. The vulnerability mapping provides a guiding tool for the village health actions. Its prerequisite is a collaborative dialogue which can be generated if

- the "two-way" dialogue processes are incorporated into the vulnerability mapping tools
- the appealing tools (like pictorial ones) are used to enhance participation
- the real-life cases are extracted through the discussion
- the role of multiple sectors and life domains (like livelihood, lifestyle etc) is brought into the discussion

 the anchors of climate and health linkages are provided creatively by the facilitators

Learning 2 Existing health system provides ample opportunities to integrate the climate change dimension

A parallel system cannot be designed to implement the actions against climate change-imposed health problems. Existing structures under National Health Mission provide various opportunities to integrate the climate change dimension. The dialogues with people and other stakeholders revealed the following opportunities which can be utilized for the climate change purpose.

Sr No	An existing component of the health system to be approached	Examples of challenges in the current scenario	Examplesofopportunitiestoincorporatetheclimatechangedimension
1	The Accredited Social Health Activist (ASHA)- This programme in India is the world's largest all-female Community Health Workers programme. ASHAs are supposed to bridge the gap between community and health services by functioning as healthcare catalysts, service providers, and community-level health activists.	Vacant positions of ASHAs in some of the village settings, lack of orientation of ASHAs for the climate change theme	ASHAs can provide heat stress early warning messages to families, ASHAs usually conduct NCD surveys so they can provide customized messages to the population at risk (eg elderly, diabetes and hypertension patients) for heat stress prevention
2	Village Health Sanitation Nutrition Committee (VHSNC) – It is the community process for taking "local level community action" for monitoring health status and undertaking local-level health planning.	Need to regularize and strengthen the periodic VHSNC meetings, the lack of orientation of VHSNC for the climate change theme and facilitation for mapping contextual vulnerabilities using simple tools	VHSNC can take up the climate-sensitive health issues on its agenda, prioritize these issues for budgeting and collective actions

3	The Annual Village health plan (VHP)- Focuses on issues that affect the health of the community. It's a continuous process and is reviewed every month.	Lack of rigour and not following the detailed protocol as mentioned in NHM guidelines, missing linkages with climate change dimension as villagers don't have the orientation	Some actions which can be incorporated in VHP were terrace and kitchen gardening, protection of green spaces, customized VBD-WBD action plans as per weather monitoring, village- level heat health or air pollution action plans, including early warning systems as part of village health action plan
4	The health centres- The infrastructure like SCs and PHCs (recently revised as health and wellness centres) are immediate contact points for villagers	Lack of climate change-oriented surveillance, poor knowledge among health care providers	Climate change messages in regular IEC, introducing heat and air pollution surveillance at the sub- centre levels
5	Private healthcare providers- These are preferred healthcare providers by many of the community members	Lack of partnership between public and private healthcare providers, poor knowledge about health impacts of climate change	Sustained engagement with private providers for improving early reporting of heat stress and respiratory illnesses, participation of private providers in health promotion messages

Box 3 Strengthening health system for Water-Borne Diseases (WBDs) in Radhapur village by considering future climate posed risks

Radhapur was a village which learnt a lesson from the story of its nearby village Saravade.

The Saravade village story

Saravade is a village with a 1600 population. The village population depends upon a single water tank for drinking water. This tank was designed to fulfil the capacity of a lesser population in earlier times. The management challenges of the tank for the growing village population do not provide an adequate window for water purification measures. The unsafe drinking water resulted in the rise of diarrhoea cases in the village in February 2023. Initially, 5-6 families had diarrhoea patients and they sought treatment from a private doctor. The private doctor didn't inform the government sub-centre. Eventually Government centre came across the diarrhoea cases in its OPD and they suspected the diarrhoea epidemic. They coordinated with the village panchayat and assessed water quality. Water purification measures were taken and people were sensitised to drink boiled water.

The learning for Radhapur

This case was explained to villagers from nearby Radhapur using WBD cyclic diagram from the PRA toolkit. Villagers were also explained the future risk of rising WBDs due to climate change impacts, water scarcity and unsafe water.



Fig. 4 WBD Cyclic diagram from PRA toolkit

Dialogue with Radhapur villagers resulted in the following opportunities for strengthening the health system.

- 1. The Radhapur village does not have ASHA in place. Measures should be taken for the ASHA's recruitment so that she can take an active lead in early reporting of WBD
- VHSNC and VHP can coordinate with the sub-centre and nearby private doctors for early reporting if such an incident happens in their village. They will also promote safe water practices among villagers. Monthly village health plans will also consider weather and water level parameters during their planning.
- 3. Gram sabha and gram panchayat will take necessary actions in the routine for water tank purification.

Takeaway for program implementing agencies/ policymakers-

The immediate outcome in this regard was the opportunities identified across the five components of the existing health system to include the climate change dimension. These opportunities encourage multi-stakeholder actions. They also aim to foster communication between village communities and health service providers in several ways. This outcome can be achieved by

- Understanding the current challenges in those components from people's and service providers' points of view
- Identifying the relevant practical action-oriented opportunities where climate change angle can be introduced

Learning 3 The inherent nature of the village as a "social" system influences the health behaviors of the community.

The community's preparedness for preventing climate-induced health impacts is a direct function of its "hardwiring" as a social system. Many otherwise routine health behaviors, which have a social and psychological explanation, continue to influence the climate and health matters too.

These field reflections can be explained by using the theoretical construct "Cues to action" from the classic Health Belief Model. (14) The Prayas actions worked here as an 'external' cue or trigger for prompting engagement in climate and health-associated behaviors. This external cue of action by Prayas triggered the following internal cues within the community and eventually initiated some actions.

However, the existing social milieu posed a number of barriers to sustaining the process such as-

Barriers to sustaining the process	How those barriers were addressed?
In many villages, people were found prioritizing other domains of life (like livelihood, and lifestyle) over the health- related discussion	Mobilizing people for the dialogues was not a straightforward path. Prayas tried to reach influential people, and plan meetings during times and occasions convenient for people. For example, in one of the villages, water fetching timing was crucial for women so all meetings carefully excluded those slots. In another village, meetings were kept immediately after the temple puja event to catch hold of the majority of people. The interest and leadership of village leaders in some cases worked in the favour.

People expected immediate direct benefits such as the distribution of free medicines, free consultations, or treatment camps. This adversely impacted their openness and interest in discussing health prevention at the individual or collective level	 Bringing forward the economic angle (i.e. disease prevention saves one's expenditure in curative health/ medical treatment) helped to some extent during dialogues. However, preventive health requires a larger discourse. This discourse must emphasize the need for multisectoral planning and action. More innovative strategies need to be identified. Sensitization of influential stakeholders within the community can help.
	Taluk/PHC/village level health burden data and its linkage with climate indicators data may help. However such data is currently lacking. At PHC and block level, Prayas advocated for producing the village-level data and sharing it with the villages themselves. Examples of such datasets could be the village-level groundwater and rainfall data, health burden data, regular sharing of water quality or vector surveillance reports.
Sub-groups within the village based on gender, age, and social group exhibited disproportionate participation in the dialogues. Such groups are more vulnerable to climate- induced health impacts. Intersectionality issues within the village affect collective action.	Such a set of modifying variables (<i>as they call in HBM</i> (14) were identified and dialogues were planned. For example, separate meetings with sub-groups of women, and in-migrants were carried out in some villages. Facilitators have plans to target other such sub-groups like youth, katkari tribals etc.
People's individual or collective beliefs were inhibiting their intrinsic motivation to take the action. The same pattern was found repeating for climate change adaptation.	Prayas dialogues attempted to enhance the perceived susceptibility of the community by challenging the belief patterns. Some examples of such beliefs were "Food cooked on Chulha is healthy and tastes better so we prefer it without considering the indoor air pollution", and "The village god protects us from all illnesses". Such beliefs were carefully challenged by critical questioning, using appropriate examples and helping people to visualize the consequences of their actions.

The villages have health system structures in place but they needed "outsiders" (Prayas) for enabling collective action. For sustainable actions, this outsider effect must be eliminated by making the village systems more motivated and enhancing their self-efficacy.

Box 4 Representative experiences shared by the healthcare providers about Prayas work

"The cyclic diagram for water-borne disease interventions in the village was very effective. People were paying attention to it during the awareness session. From Primary Health Centre, our team would like to attend such dialogues in the village and learn from them. During our village activities, such pictorial tools will also be helpful for us."

(Aarogya Sevak, Bhongavli PHC)

"Things don't change immediately. But people remember things discussed in such meetings. If someone suffers from heat stress, things discussed will be recalled and actions will be taken. We as ASHA workers also get benefitted from any such health-related work that happens in the village. We did this (the present action-research) meetings in the village and later when the village panchayat meeting happened, people discussed regarding the follow-up of water quality reports and decided to follow-it up closely."

(ASHA worker, Vagajwadi village)

"The awareness work that's happening regarding transition to clean cooking fuels is very crucial. The government has launched the schemes like the empanelment of solar heaters in villages. These could be helpful in this regards."

(Block committee member, Bhor)

Takeaway for program implementing agencies/ policymakers-

The outcomes associated with lesson 3 were indirectly contributing to the overall process. The experience provides Dos and Don'ts for community engagement with the theoretical reference from the classic health belief model. Community engagement can be successfully achieved if-

- People's priorities are adequately listened to and the climate-health angle is integrated with their priorities
- Sub-groups of people are identified and their exclusive dialogues are arranged
- The actions are planned flexibly by considering the motivation of leadership in the village
- People's individual or collective beliefs are addressed and challenged

- Consolidated data at the village level is generated and kept available in the village for planning evidence-informed actions
- Intersectionality within the village is sufficiently addressed during the dialogues

Sr No	The Outcome	Future Scope for Institutional Integration	ExamplesOfPossibleActivitiesUnderNPCCHHWhereOutcomesCanBeRelevant
1	Contextual climate and health vulnerability mapping for a village by focusing on the role of people in mapping exercises	Exchanging vulnerability mapping to village elected representatives with aim of its use in annual village health action plan	Capacity building for vulnerability assessment at various levels and liaison with centre
2	Five component gateways in existing health system to include climate change dimension	Advocacy at the levels of local primary health centre, district health authorities and national policy makers	Develop/ strengthen the monitoring and surveillance systems for climate sensitive diseases, designing heat and air pollution action plans guidelines
3	Analysis of village as a social system and climate change- health associated behaviours of people	Advocacy to "change- maker" civil society organizations, NGOs and academic institutions working in thematic areas of climate change and health	Development of IEC material on health impacts of Climate variability & change

6. The overall Outcomes & Institutional Integration

7. The Way Forward

The current initiative by Prayas health group was small-scale and exploratory. The present case study reflects on the outcomes and learning lessons, however, the way forward would be sustaining the present work and formal impact assessment.

In a long-term vision, it aims to develop a framework for climate adaptive health system actions through a "bottom-up" approach. The present work will be continued across the three trajectories-

Micro-level advocacy and implementation

This will be continued in the present set of project villages. Examples of some actions already in discussions, aligning with this trajectory are-

- Support to PHC and HWCs for heat and health action capacity building in the villages
- Disseminating IEC material designed by the Prayas with PHC
- Exploring the involvement of private practitioners in climate-oriented disease surveillance and partnership with the public heath sector
- Advocacy activities at the village level like encouraging the formation of village action groups, strengthening communication and trust between villages and PHC-SCs, reviving the role of ASHAs-VHSNC-VHP in climate and health action

Handholding and sharing lessons with other development sector organizations

Prayas is having a dialogue with some NGOs/ CBOs in the Maharashtra state who primarily work with local health system advocacy. The effort will be to disseminate Prayas experience of integrating the climate change lens into the health system from people's perspective. Working with such organizations will also involve the actions like sharing PRA tools designed by Prayas and capacity building of other organizations with supportive supervision.

Macro-level advocacy

Dissemination through this case study itself is an effort under macro-level advocacy. Prayas will continue such dissemination with other academic and civil society platforms. There will also be an effort to generate a conceptual framework from such actions which can be further handed over to the government sector.

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