स्वास्थ्य एवं
परिवार कल्याण मंत्रालय
MINISTRY OF
HEALTH AND
FAMILY WELFARE

सत्यमेव जयते

ARUNACHAL PRADESH

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STATE ACTION PLAN ON CLIMATE CHANGE AND HUMAN HEALTH

National Centre for
Disease Control
Government of India

National Programme
on Climate Change
and Human Health

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2022-27

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Table of Contents

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This document is based on the inputs provided by officials and experts from Arunachal Pradesh State Departments of Health & Family Welfare, Environment, Disaster Management Authority. Active contributors include the experts from Health services department and the State Pollution Control Board. The strategies and activities were planned under the guidance and administrative support from Dr. Moromor Lego, Director of Health Services.

Technical coordination and documentation support were done under the leadership of Dr. L. Jampa, State Nodal Officer- Climate Change and Human Health (SNOCCHH), supported by Dr. Dukam Taipodia, Assistant Nodal Officer- CCHH.

Executive Summary

Climate change is a growing concern for achieving sustainable development. Sustainable Development Goal 13 emphasises to take urgent action to combat climate change and its impacts. Climate change poses several threats to the health of the population. The health effects of climate change occur either through direct effects (changes in temperature and precipitation, occurrence of heat waves, floods, droughts, and fires, etc) or indirect effects (ecological disruptions resulting in crop failures, shifting patterns of diseases' vectors, or displacement of populations).

National Action Plan on Climate Change and Human Health (NAPCCHH) has been drafted and it called for state-specific action plans. It is true that adaptation challenges are experienced most acutely at the state level. The demographic, socio-economic and physiographic situations in the states determine their specific vulnerabilities towards climate change and in such circumstances, it is imperative to work on precautionary and anticipatory measures for facing the expected changes and adapting to the changes in the long term.

The health impact of climate change is already evident in Arunachal Pradesh as the state is experiencing increased urbanisation leading to increase in incidences of Non-Communicable Diseases. Arunachal Pradesh also witnessed emergence and re-emergence of many infectious diseases including vector-borne and zoonotic diseases in recent years. Due to the epidemiological transition, a large proportion of population in the state is susceptible to water-borne diseases like hepatitis A and ADD leading to explosive outbreaks even with mild water contamination. In Arunachal Pradesh, the health of human populations is sensitive to shifts in weather patterns and other aspects of climate change, owing to urbanization, depletion of forest cover, increased energy consumption, variation in food production, vector borne diseases, inadequate sewage and waste management and issues of inaccessibility to healthcare to the marginalised population. In view of the above requirement, Government of Arunachal Pradesh has been working on a strategy for action in the state in response to climate change and health.

The State Action Plan for Climate Change and Human Health (SAPCCHH) proposes a multi-pronged approach to address the health-related aspects of climate change. It envisions strengthening the health of the citizens of Arunachal Pradesh against climate-sensitive illnesses. The goal is to reduce morbidity, mortality, injuries, and health vulnerability to climate variability and extreme weathers. The objective is to build the capacity of health care services against adverse impact of climate change on human health.

PART I

Climate Change and its Health Impacts

CHAPTER 1

Introduction

Climate change is defined as: "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods." It affects social and environmental determinants of health like – clean air, safe drinking water, sufficient food, and secure shelter.

Climate change may negatively affect human health in a number of ways, but the commonly experienced are increased frequency and intensity of heat waves leading to the rise in heat- related illnesses and deaths, increased precipitation, floods, droughts, and desertification costing lives directly. High temperature is known to increase the level of 'ground level ozone' and other 'climate-altering pollutants' other than carbon dioxide, which further exacerbate cardio-respiratory and allergic diseases and certain cancers. Besides these, there is an increase in transmission and spread of infectious diseases, changes in the distribution of water-borne, food-borne, and vector-borne diseases, and effects on the risk of disasters and malnutrition.

The United Nations Framework Convention on Climate Change (UNFCCC) came into force on 21st March 1994. Since then many steps were initiated to reduce the effect of climate change at meetings like "Rio Convention 1992", Kyoto protocol 1997", "Male' Declaration 1998", "Convention of Parties", "Cancun Agreement 2010", "Durban Platform 2011", " Nationally Determined Contributions" (NDCs) at the Conference of Parties 21".

India is a signatory to the "Male' Declaration" wherein the health sector has to be strengthened so as to make it climate resilient. According to Male' Declaration, it is desired that health-care facilities should be prepared to adapt to the climatic adversaries and be climate-resilient, particularly to encourage that these are able to withstand any climatic event, and that essential services such as water, sanitation, waste management, and electricity are functional during such events. Further, for climate resilience, the health department has to undertake measures to initiate the greening of the health sector by adopting environment-friendly technologies and using energy-efficient services.

Initiatives undertaken by the Government of India are: a) Identification of Ministry of Environment, Forest & Climate Change (MoEF&CC) as nodal ministry; b) Formulation of National Environmental Policy 2006; c) Formulation of Prime Minister's Council on Climate Change for matters related to Climate Change.

MoEF&CC has developed National Action Plan on Climate Change with eight missions. Later on, four new missions (including Health Mission) were identified. The Health Mission aims to reduce climate-sensitive illnesses through integration with other missions under National Action Plan for Climate Change (NAPCC) as well as through programmes run by various ministries. As a follow-up action, the Ministry of Health &

Family Welfare (MoHFW) constituted a National Expert Group on Climate Change & Health (NEGCCH) to prepare National Action Plan on Climate Change and Human Health (NAPCCHH) and recommend strategies for indicators, mitigation, capacity building, etc.

National Centre for Diseases Control (NCDC) is identified as the 'technical nodal agency' by MoHFW for the proposed National Mission on Health. The Centre for Environmental and Occupational Health Climate Change & Health (CEOH&CCH), NCDC, is implementing the National Programme of Climate Change and Human Health (NPCCHH), under which the Punjab has prepared its State Action Plan on Climate Change and Human Health (SAPCCHH). The SAPCCHH is a long-term vision and planning document prepared by the Department of Health & Family Welfare, Arunachal Pradesh, applicable for up till the year 2027. Based on this document, district specific action plans will also be prepared. The Arunachal Pradesh SAPCCHH highlights the current and future vulnerabilities to climate change in the state, the disease burden and the initiatives to be undertaken by the state to reduce the disease burden and develop a climate responsive and sustainable healthcare ecosystem in the state.

CHAPTER 2

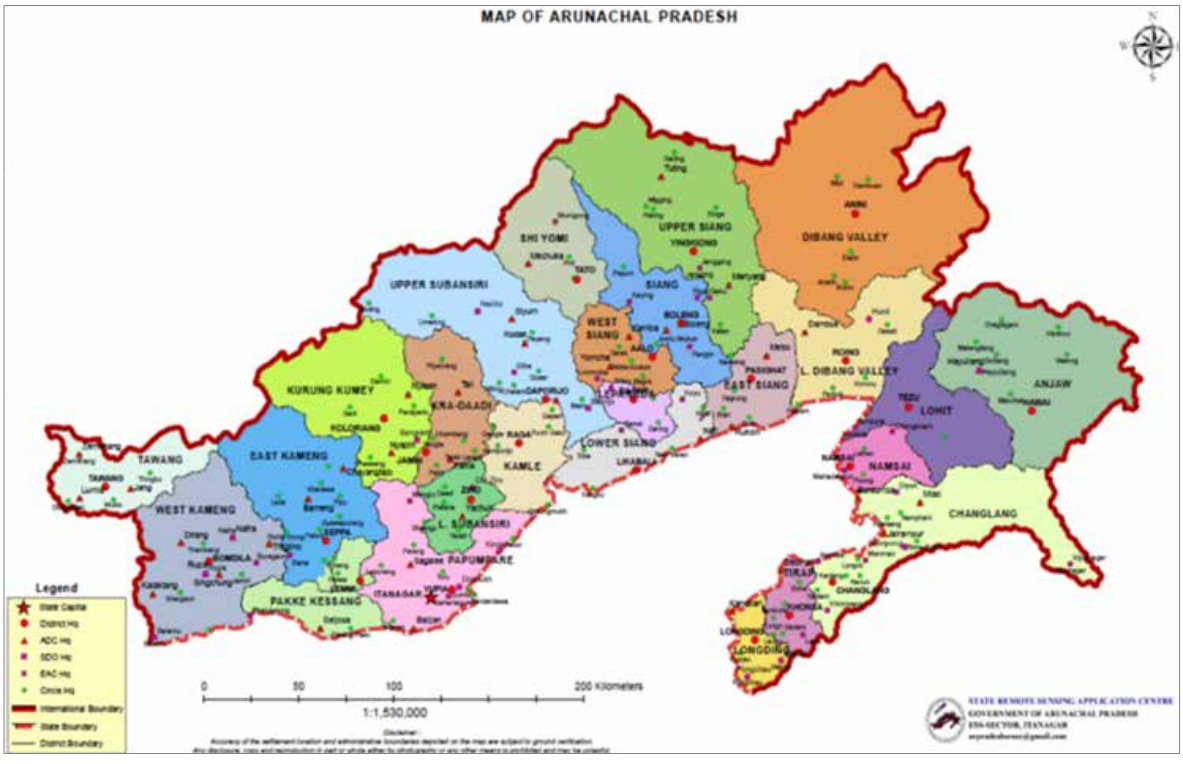
Climate Vulnerability

Geography and Demographics

Arunachal Pradesh attained its statehood on 20th February, 1987. Arunachal Pradesh with a geographical area of 83,743 sq. km is the largest State in North-East India and is bounded by countries such as Bhutan to the west, China to the north-east, Myanmar to the east, Nagaland to the south-east and the plains of Assam in the south. The state is situated in the Indian Eastern Himalayan region between latitudes 26^0 30'N and 29^o 30'N, longitudes 91^o 30'E and 97^o 30'E with varying elevations ranging from 50m in the foothills gradually ascending to above 7000 m (SAPCC, 2011). Spatial representations of districts in Arunachal Pradesh are depicted in Figure 1.

At present, there are 25 districts and 1 Capital Complex, 38 ADC HQ (Ind), 12 SDO HQ, 26 EAC HQ 123 circles, and 909 blocks. Each district is under the administrative control of the Deputy Commissioner. Each Civil sub-division is under the control of an Additional Deputy Commissioner / Sub-Divisional Officer. There are 3863 villages in the state. (Census, 2011). The demographic profile is given in Table 1.

Figure 1: Map of Arunachal Pradesh



Source: SRSA

Table 1: Demography Profile

Population	13,82,611
Male	7,20,232
Female	6,62,379
Sex Ratio	920 females to 1000 males
Population density	17 persons per sq. km.
Decadal growth rate	25.92% (2001-2011)
Infant Mortality Rate (IMR)	37
Literacy rate	82.93

Source: (Census, 2011)

Climatic conditions

There are five agro climatic zones in Arunachal Pradesh reflecting the climate variability due to the large area of the state. These include the alpine zone, mid-tropical hill zone, mid-tropical plain zone, sub-tropical hill zone, and temperate sub-alpine zone. The climate in Arunachal Pradesh ranges from sub-tropical to temperate depending on the altitude of the land. For instance, the climate in the upper regions of the state is alpine or tundra climate, the middle ranges have a temperate climate, and the lower ranges experience humid conditions. The average temperature ranges from 15°C to 21°C during winters, while during monsoon, the temperature ranges from 20°C to 30°C (SAPCC, 2011). The rainfall is amongst the heaviest in the country, receiving more than 3500 mm in a year. The state receives rainfall over a period of 8 to 9 months except in winter season, however, most of the rainfall is between the months of May - September. Regions at the higher altitudes in the state experience snow fall during winter. The average annual rainfall is 1000 mm in the higher elevations and 5750 mm in the foot hill areas. Arunachal Pradesh is prone to disasters such as floods, flash floods, landslides, earthquake, erosions, hailstones, high wind speed/thunderstorm, etc.

Opportunities

The Government of Arunachal Pradesh while endorsing the Pakke Tiger Reserve, 2047 Ministerial Declaration on Climate Change Resilient and Responsive Arunachal Pradesh, on 13th November 2021, is prioritizing five broad themes – Panch Dhara - and underlying 75 strategies with assured sector-wise resource allocation within respective budgetary envelopes for coordinated, systemic, sustained, and ambitious engagements in the state to urgently tackle and mitigate climate change impacts in and realize climate resilient and responsive landscapes in tune with the national policies on climate change response:

The broad strategies of the declaration for Health and Wellbeing for all:

- ***Reduce morbidity, mortality, injuries, and health vulnerability*** due to climate change and extreme weather events.
- ***Strengthen capacity*** of the healthcare system and health-care providers, train and sensitize all health service providers as well as communities on the respective health adaptation plans.
- Formulate adaptation plans.

- ***Strengthen public health preparedness and response*** through sensitization of policy makers, including elected representatives, community-based organizations, youth associations, social influencers, non-governmental organizations, religious and spiritual Pradesh.
- Strengthen ***research capacity*** and validation of medicinal plants and herbs as well as traditional medicine systems' knowledge and folk healing practices.
- Strengthen ***integrated health information platform and surveillance***
- Promote integrated and whole of school, college and technical education approach to increase climate change awareness, build responding abilities and foster inter-sectoral partnerships.

Recognizing that collective human actions have immense potential to influence and determine the future course of climate and that there is an urgent need for an inclusive, comprehensive, effective, efficient, and evidence-based progressive engagement to mitigate and adapt with resilience to significantly reduce the risks and impacts of climate change in Arunachal Pradesh backed by scientific knowledge.

CHAPTER 3

Climate Sensitive Diseases Prevalent in the State

Geo-physical & Climate variables

Arunachal Pradesh is situated in the north-eastern part of India in the eastern Himalayas. The state is located between 2603^{0}'N and 29^{0}30'N latitude and 91^{0}30'E and 97030'E longitude with an area of 83,743 km^{2}. It is bounded by Myanmar in the east (440 km), China (1080 km) in the north and northeast, Bhutan in the west (160 km), and Assam in the south. The low region of Arunachal Pradesh bordering Assam is a part of the plains of the Brahmaputra river in the south. The state is mostly mountainous where the altitude is up to about 7,090 m above mean sea level with several high hills along the northern borders criss-crossed with ranges running north-south. The extreme north and north-eastern regions are covered with snow throughout the year, however, the general tendency of hills is found sloping towards the plains of Assam. The state is mostly covered by several hills of elevation of more than 2000m, being high hills - Kangte, Nyegi Kangsang, Gorichen, Eastern Gorichen, Patkai etc. However, parts of the Lohit, Changlang and Tirap districts are covered by the Patkai hill. All districts of the state have hills of peak heights more than 2500m. Wild jungles with hilly terrain forms almost 82% of total area of the state, rock and snow forms about 8%, leaving a modest 10% for towns and farm-land.

The average temperature in Arunachal Pradesh ranges from 15°C to 21°C in winter, while the monsoon temperature ranges from 20°C to 30°C. The rainfall received is among the heaviest in the country, with more than 3500 mm in a year. Nevertheless, the state is characterised by persistent water scarcity and periodic exposure to severe landslides, flash floods and droughts along with poverty and a non-diversified pattern of livelihood, making it highly vulnerable to climate change.

The economy is largely agrarian, based on terrace- farming and a few pockets of shifting cultivation. Agriculture and animal husbandry are the two predominant occupations of the rural communities.

Statistics of state/UT

Sl. No.	District	Population as per Census 2011	Estimated Projected Population (2021-22)	Crude Birth Rate (CBR)	Estimated Under 5 Years Population	Estimated 60 +	Estimated Pregnant Women 2022
1	Anjaw	21167	24603	1.377	2460	1390	229
2	Changlang	148226	183487	1.959	18349	10349	1711
3	Dibang Valley	8004	8862	0.93	886	500	83
4	East Kameng	63332	94588	3.714	9459	5335	882
5	East Siang	70956	82055	1.33	8206	4628	765
6	ICC	114407	150112	2.5	15011	8557	1400
7	Kamle	19697	33348	4.865	3335	1881	311
8	Kra Daadi	46704	60106	2.32	6011	3390	560
9	Kurung Kumey	45372	58392	2.32	5839	3293	544
10	Lepa Rada	20152	22008	0.804	2201	1241	205
11	Lohit	49776	59555	1.644	5956	3359	555
12	Longding	56953	64678	1.163	6468	3648	603
13	Lower Dibang Valley	54080	58399	0.701	5840	3294	545
14	Lower Siang	22630	25417	0.804	2542	1434	237
15	Lower Subansiri	67751	114249	4.865	11425	6444	1065
16	Namsai	95950	114801	1.644	11480	6475	1070
17	Pakke Kessang	15358	22937	3.714	2294	1294	214
18	Papum Pare	62166	81567	2.5	8157	4600	761
19	Shi Yomi	13310	14536	0.804	1454	820	136
20	Siang	27924	31611	1.33	3161	1783	295
21	Tawang	49977	67956	2.833	6796	3833	634
22	Tirap	55022	62485	1.163	6249	3524	583
23	Upper Siang	35320	37628	0.577	3763	2122	351
24	Upper Subansiri	79030	135650	5.034	13565	7651	1265
25	West Kameng	83947	100657	1.664	10066	5677	939
26	West Siang	56516	61720	0.804	6172	3481	575
Total		**1383727**	**1771407**	**2.05**	**177141**	**100000**	**16517**

Healthcare Infrastructure at the State level

The table below indicates the existing healthcare infrastructure details in the state of Arunachal Pradesh:

Sl No.	Districts	District Hospital	Community Health Centre	Primary Health Centre		Sub Health Centre	
				Total	HWC	Total	HWC
1	Anjaw	1	4	6	2	8	4
2	Changlang	1	5	7	5	26	5
3	Dibang Valley	1	0	1	1	8	3
4	East Kameng	1	1	8	8	17	9
5	Eastsiang	1	2	9	9	16	15
6	Kamle	0	2	4	4	20	16
7	Kra Daadi	1	0	6	5	10	4
8	Kurung Kumey	1	2	4	3	14	3
9	Leparada	1	0	2	2	11	6
10	Lohit	1	2	4	4	15	3
11	Longding	0	2	3	1	8	1
12	Lower Dibang Valley	1	4	4	3	13	10
13	Lower Siang	1	1	5	5	5	3
14	Lower Subansiri	1	2	5	5	23	15
15	Namsai	1	2	4	4	15	15
16	Pakke Kessang	0	2	3	3	14	5
17	Papum Pare (Urban ICR)	1 (Medical College)	0	4	4	11	6
18	Papum Pare (Rural)	0	4	13	9	27	20
19	Shi Yomi	0	1	2	2	3	0
20	Siang	1	2	7	6	27	11
21	Tawang	1	2	6	6	13	13
22	Tirap	1	1	7	6	11	5
23	Upper Siang	1	4	2	2	14	6
24	Upper Subansiri	1	4	5	4	23	13
25	West Kameng	1	5	5	5	22	11
26	West Siang	1	2	6	5	15	9
	Total	**21**	**56**	**132**	**113**	**389**	**211**

Human Resource

The details of the existing human resource personnel is provided in the table below:

In Position Critical Service Delivery HR			
Category	**Regular**	**Contractual**	**Total**
Specialists	185	9	194
GDMO	729	147	876
Nursing Officer	554	897	1451
ANM	631	371	1002
Lab. Tech	198	191	389

Overall Human Resource under Dept. of H&FW			
Staff Group	**Regular**	**Temporary/Contractual**	**Total**
Group A	265	898	1163
Group B	168	524	692
Group C	3383	3590	6973
Service Delivery HR (NHM)		2055	2055
Programme Management HR (NHM)		814	814
NUHM		21	21
Total	**3816**	**7902**	**11718**

Human Resources

- Shortage of Super specialist, Specialist
- Suboptimal distribution of existing HR
- Contractual Employees
- 230 (6%)Vacancies in regular posts against sanctioned posts
- 79 (5%) Vacancies under NHM against sanctioned posts
- To meet the IPHS shortfall of 69.8% Specialists, 24.5% Staff Nurses, 3.2% Lab. Tech., is estimated.

State Health Indicators

The composite health indicators for the population in the state of Arunachal Pradesh as per NFHS is indicated in the table below:

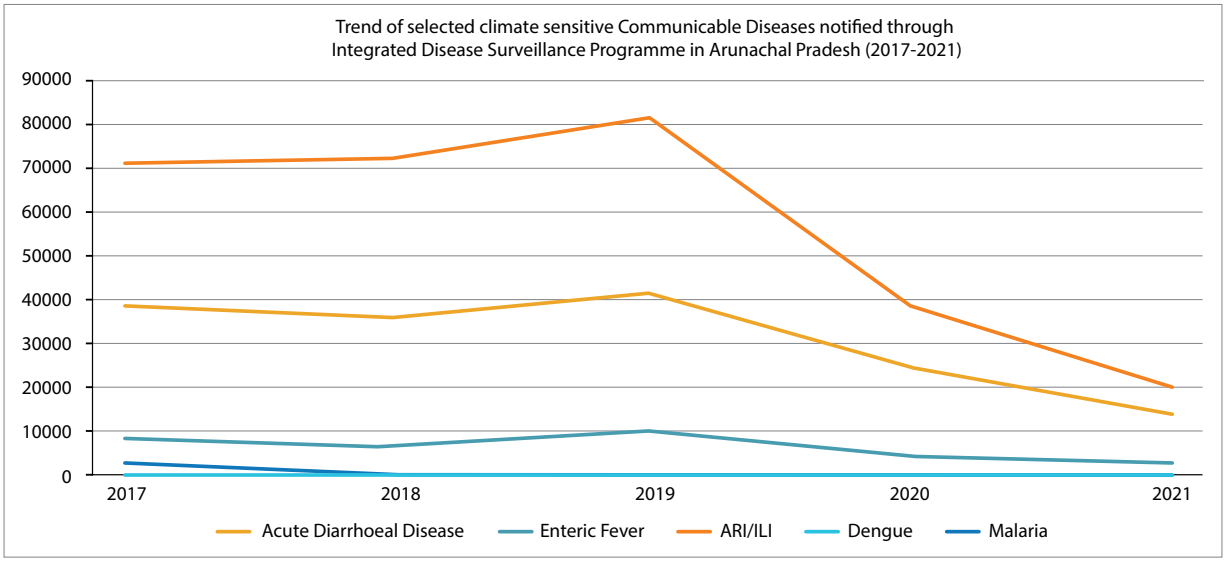
Indicators		NFHS-4	NFHS-5
Child Health	Infant mortality rate (IMR)	22.9	12.9
	Neonatal mortality rate (NNMR)	11.8	7.7
	Under-five mortality rate (U5MR)	32.9	18.8
	Children age 12-23 months fully vaccinated	71.4	76.4
	Children aged 6-59 months who are anemic	54.2	56.6

Indicators		NFHS-4	NFHS-5
Maternal Health	Mothers who had an antenatal check-up in the first trimester (%)	36.9	53.1
	Mothers who had at least 4 antenatal care visits (%)	26.7	36.5
	Average out-of-pocket expenditure per delivery in a public health facility (Rs.)	6473	9731
	Institutional births (%)	52.2	79.2
	Pregnant women aged 15-49 years who are anemic	37.8	27.9
Family Planning	Total unmet need (%)	21.5	12.5
	Current Use of Family Planning Methods - Any method (%)	31.7	59.1
	Sex ratio of the total population	958	997
	Total fertility rate	2.1	1.8

Climate Sensitive Illnesses in the State

In accordance with the ICMR's, India: Health of the Nation's States-The India State-Level Disease Burden Initiative for the state of Arunachal Pradesh, a changing trend is shown from communicable diseases to non-communicable disease as the leading causes of death and disability combined from 1990 to 2016.

The state is experiencing increased urbanisation and increase in incidence of non-communicable diseases. Data reported from IDSP-Arunachal Pradesh shows a decreasing trend of communicable diseases recorded in the state.



However, due to epidemiological transition, a large proportion of population in the state is susceptible to water-borne diseases like Hepatitis A, ADD leading to explosive outbreaks even with mild water contamination. In Arunachal Pradesh, the health of human populations is sensitive to shifts in weather patterns and other aspects of climate change, owing to urbanization, depletion of forest cover, increased energy consumption, indoor air pollution, variation in food production, vector-borne diseases, inadequate sewage and waste management and issues of inaccessibility to health care among in some parts of the state.

Following are the major climate sensitive diseases prevalent in Arunachal Pradesh.

- Vector Borne Diseases
- Water Borne Diseases
- Food Borne Diseases
- Acute Respiratory Illnesses attributed to Air Pollution
- Heat related illnesses
- Nutrition related diseases
- Allergic Diseases
- Cardio-pulmonary diseases
- Mental Health support
- Zoonotic Diseases
- Disaster management - Extreme weather events (Landslides, Floods, Forest Fires, Earthquakes) affecting health

CHAPTER 4

Vision, Goals and Objectives

Vision: Strengthening of healthcare services for all the citizens of the state, especially vulnerable groups like children, women, elderly, tribal and marginalized populations against climate-sensitive illnesses.

Goal: To reduce morbidity, mortality, injuries and health vulnerability due to climate variability and extreme weather.

Objective: To strengthen healthcare services against adverse impact of climate change on health.

Specific Objectives

Objective 1: To create awareness among general population (vulnerable community), health-care providers and policy makers regarding the impacts of climate change on human health.

Objective 2: To strengthen the capacity of healthcare system to reduce illnesses/ diseases due to variability in climate.

Objective 3: To strengthen health preparedness and response by performing situational analysis at state/ district/ below district levels.

Objective 4: To develop partnerships and create synchrony/ synergy with other missions and ensure that health is adequately represented in the climate change agenda in Arunachal Pradesh in coordination with the Ministry of Health & Family Welfare.

Objective 5: To strengthen state research capacity to fill the evidence gap on climate change impact on human health.

CHAPTER 5
Organizational Structure

ORGANISATIONAL STRUCTURE

NATIONAL LEVEL

Key Nodal Agency
Head, NPCCHH
(NCDC, MoHFW)

- Prime Minister's Council on Climate Change
- Health Mission
- Ministry of Health and Family Welfare (MoHFW), Govt of India

STATE LEVEL

Key Nodal Point
(SNO-NPCCHH)

- State Governing Body - Environmental Health
- State Level Task Force - Environmental Health
- State Environmental Health Cell

DISTRICT LEVEL

Key Nodal Point
(DNO-NPCCHH)

- District Task Force - Environmental Health
- District Environmental Health Cell

State Level - Governing Body - Environmental Health

The state level governing body for policy level decision shall be working under Chairpersonship of the Honourable State Health Minister. The member details are indicated in the table below:

Honourable State Health Minister	Chairperson
Principal Secretary (Health)	*Vice Chairperson*
Director Health Services	Member Secretary
Mission Director-National Health Mission	Member
Secretary, Disaster management Authority	Member
Secretary, Department of Agriculture	Member
Secretary, Department of PHE & WS	Member
Secretary, Department of Transport	Member
Secretary, Department of Animal Husbandry & Vety & Dairy Dev	Member
Chief Conservator of Forests (ENV & CC), Department of Environment & Forests	Member
Secretary, Department of Women and Child Development / Social Justice	Member
Secretary, Department of Science and Technology	Member
Secretary, Department of Education	Member
Secretary, Department of Public Works Department	Member
Secretary, Department of Power	Member
Secretary, Department of Urban Development (Municipalities) and planning	Member
Secretary, Department of Finance	Member
Secretary, Department of Law & Judl	Member
Secretary, Department of Food and Civil Supplies	Member
Secretary, Department of Panchayati Raj	Member
Director Medical Education and Research	Member
State Nodal Officer - Climate Change	Member
Head – NAPCCHH, CEOH & CCH Division, NCDC	Member

State Level Task Force - Environmental Health

This task force is working under the guidance of Principal Secretary (Health) of the state. It is responsible for directly overseeing the implementation of the State Action Plan for Climate Change and Human Health (SAPCCHH) in Arunachal Pradesh. It shall be working through Directorate of Health Services (DHS) of the state, which will be the implementing agency for SAPCCHH. The members of the task force include:

Principal Secretary (Health)	Chairperson
State Nodal Officer - Climate Change	Member Secretary
Mission Director - National Health Mission	Member
Director Health Services	Member
Director - State Disaster Management Authority	Member
Principal Chief Conservator of Forest	Member
Director - Department of Agriculture	Member
Chief Engineer - Department of PHED	Member
Director/Chairperson - Department of Animal Husbandry	Member
Director, Meteorological Department	Member
Chairperson, State Pollution Control Board	Member
Director Medical Education and Research	Member
Nodal Officer - NHM	Member
Director, TRIHMS Medical College	Member
State Surveillance Officer	Member
State Nodal Officer NVBDCP	Member
Nodal Officer (IEC) NHM	Member

The task force of Arunachal Pradesh Environmental Health Cell will coordinate with the central agencies (MoHFW, NCDC) for the execution of state SAPCCHH. Further, DHS has constituted an Environmental Health Cell within the State Health Department and has identified a Nodal Officer from the Health department. The members of the Environmental Health Cell include:

State Nodal Officer - Climate Change	Chairperson
State Nodal Officer - NHM	Member
State Nodal Officer NVBDCP	Member
State Immunization Officer	Member
State Program Officer - Mental Health	Member
State Surveillance Officer	Member
Nodal Officer IEC/State Mass Media	Member
State Veterinary Consultant	Member
Microbiologist, IDSP	Member

Roles and Responsibilities of the Arunachal Pradesh Environmental Health Cell

- Preparation and implementation of State Action Plan for Climate Change and Human Health
- Conduct Vulnerability assessment and risk mapping for commonly occurring climate sensitive illnesses in the state
- Assessment of needs for health care professionals (like training, capacity building) and organise training, workshop and meetings
- Maintain state and district level data on physical, financial, epidemiological profile for climate sensitive illnesses

- Ensure convergence with NHM activities and other related programs in the state/district
- Monitor programme, review meetings, field observations
- Timely issue of warning/alerts to health professionals and related stakeholders as well as general public through campaign or using mass media (electronic or printed)
- Social mobilization against preventive measures through involvement of women's self-help groups, community leaders, NGOs etc.
- Advocacy and public awareness through media (street Plays, folk methods, wall paintings, hoardings etc.)
- Conduction of operational research and evaluation studies for the climate change and its impact on human health.

District Level

Furthermore, at the district level, the District Level Task Force is constituted. The members of the same include:

Structure of District Level Task Force

Deputy Commissioner	Chairperson
District Medical Officer	Vice Chairperson
District Surveillance Officer/District Nodal Officer - Climate Change	*Member Secretary*
District Programme Manager - NHM	Member
District Head, Department of Disaster Management Authority	Member
District Head, Department of Agriculture	Member
District Head, Department of PHED	Member
District Head, Department of Transport	Member
District Head, Department of Animal Husbandry	Member
District Head, Department of Environment and Forests	Member
District Head, Department of Women and Child Development/Social Justice	Member
District Head, Department of Science and Technology/Earth Sciences	Member
District Head, Department of Education	Member
District Head, Department of Pollution Control Board	Member
District Head, Department of Human Resource Development	Member
District Head, Department of Public Works Department	Member
District Head, Department of Power	Member
District Head, Department of Finance	Member
District Head, Department of Law	Member
District Head, Department of Panchayati Raj	Member

District Environment Health Cell

District Surveillance Officer/ District Nodal Officer - Climate Change	Chairperson
District Veterinary officer	Member
District RCH officer	Member
District Epidemiologist	Member
District Microbiologist	Member
District Immunisation Officer	Member
District Training Officer	Member
Data entry operator	Supporting staff

Roles and Responsibilities of the District Environmental Health Cell

- Preparation and implementation of District Action Plan for Climate Change and Human Health.
- Conduct Vulnerability assessment and risk mapping for commonly occurring climate sensitive illnesses in the district.
- Maintain and update district database of illnesses identified in the district.
- Assess needs for health care professionals and conduct sub-district/ CHC level training/ workshop and meetings for capacity building.
- Ensure appointment of contractual staff and engage them in the assigned task of data management under the NAPCCHH.
- Maintain district level data on physical, financial, epidemiological profile for these illnesses.

Community Health Centre Level

The proposed CHC Level Structure is as under:

- Medical Superintendent (CHC Hospital) — Chairperson
- Taluka Health Officer/ Talukas Health Officer — Member Secretary
- Health Education Officer/ Similar Post — Member
- Block Development Officer — Member
- Health Supervisor — Member

Health Facility Level (PHC)

At the health facility, the responsibility for the implementation of the programme will lie with the Medical Officer (in-charge) of the facility. The existing machinery of NHM will be utilised for the related activities. The Rogi Kalyan Samiti (RKS) would be reviewing and monitoring implementation at the health facility level. The ANM, ASHA and Anganwadi worker will assist in activities related to implementation of action plan at the local level.

PART II

Health Action Plans on Priority Climate Sensitive Health Issues

CHAPTER 6

Health Action Plan on Air Pollution Related Diseases

Air pollution is a major environmental risk to health. The formation, transport and dispersion of many air pollutants is determined partly by climate and weather factors such as temperature, humidity, wind, storms, droughts, precipitation and partly by human activities known to produce various air pollutants. It is thus logical to assume that climate change will influence the dynamics of air pollution. By reducing air pollution levels, states can reduce the burden of disease from stroke, heart disease, lung cancer, and both chronic and acute respiratory diseases, including asthma.

Two major types of Air Pollution

1. Ambient (Outdoor) Air Pollution
2. Household (Indoor) Air Pollution

The World Health Organization (WHO) defines ambient air pollution as potentially harmful pollutants emitted by industries, households, cars, and trucks. Of all of these pollutants, fine particulate matter has the greatest effect on human health. Most fine particulate matter comes from fuel combustion from vehicles, power plants, industry, households, or biomass burning.

Indoor air pollution refers to chemical, biological and physical contamination of indoor air. According to WHO, almost three billion people worldwide continue to depend on polluting fuels, including biomass fuels (wood, dung, and agricultural residues), kerosene and coal, for their energy needs. Cooking and heating with polluting fuels on open fires or traditional stoves results in high levels of household air pollution. Indoor smoke contains a range of health-damaging pollutants, such as small particles and carbon monoxide, and particulate pollution levels may be 20 times higher than accepted guideline values.

Ambient (outdoor air pollution) in both cities and rural areas was estimated to cause 3.7 million premature deaths worldwide in 2012. Air pollution also affects health by causing acid rain; eutrophication due to nitrogen oxides, emission in air from power plants, cars, trucks, and other sources; Haze; toxic effects on wildlife; Ozone depletion; Crop and forest damage etc. Over 4 million people die prematurely from illness attributable to the household air pollution from cooking with solid fuels. 3.8 million premature deaths annually from non-communicable diseases including stroke, ischemic heart disease, chronic obstructive pulmonary disease (COPD) and lung cancer are attributed to exposure to household air pollution.

Prominent causes of Ambient Air Pollution in Arunachal Pradesh:

1. Pollution by Automobiles
2. Forest fires due to Jhum cultivation

Prominent causes of Household Air Pollution in Arunachal Pradesh:

1. Use of biomass fuel for cooking
2. Burning of waste
3. Tobacco smoke
4. Outdoor air pollution that invades indoor…
5. Chemicals used in houses like floor cleaners
6. Pollen, Dust mites and pet hairs

Air Quality Index: Air Quality Index is a tool for effective communication of air quality status to people in terms, which are easy to understand. It transforms complex air quality data of various pollutants into a single number (index value), nomenclature and colour.

Air Quality Index (AQI) Category	
Good	0-50
Satisfactory	51-100
Moderately Poor	101-200
Poor	201-300
Very Poor	301-400
Severe	401-500

Number of AQI monitoring stations within state:

1. By Central Pollution Control Board (CPCB)-2 (Manual) (Naharlagun and Itanagar)
2. BY State Pollution Control Board (SPCB)-2 (Namsai and Kharsang)
3. By System of Air Quality and Weather Forecasting and Research (SAFAR) - Nil

- Enlist the probable causes of air pollution in the cities having AQI level (Highest AQI value available in the previous year) above 200:

There have been no reports of AQI above 200 in the above cities.

- Names of Cities identified under National Clean Air Program (NCAP) in Arunachal Pradesh
  - There are no cities identified under National Clean Air Program (NCAP) in Arunachal Pradesh.

Broad strategies for prevention of air pollution related illnesses

A. Awareness Generation

To increase the general awareness among all the relevant stakeholders including vulnerable communities, health-care providers, and policy makers regarding the impacts of air pollution on human health and ways to address them.

a. IEC Campaign

The State will aim to create awareness through IEC by engaging in development of locally and culturally more acceptable messages in posters, audio, video, organising public health events, issuing advisories related to air pollution and human health.

The communication method will be largely through posters, hoardings/billboards, audio-video clips disseminated via mass media and messages in the social media platforms like twitter, whatsapp groups and facebook between September to February every year.

Communication Method	Content
• **Posters:** At least 1-2 large wall poster and/ 1-2 foam board posters printed and disseminated in all healthcare facilities and all government educational institutes. • One each at each facility/ institute per year. • **Hoardings/billboard:** 5-10 billboards on air pollution will be placed in public areas. • **Wall painting:** 1-2 wall paintings on air pollution and impacts on health per healthcare facility. • Audio-video clips on air pollution and health should run in mass media throughout the year: - 1-2 **video clips** of 1-2 minutes duration broadcasted on air pollution and health. - 1-2 **radio clips** of 1-2 minutes duration broadcasted on air pollution and health. - **Social media:** Twitter and/Facebook will be utilised to post IEC and event related info with appropriate tagging.	• IEC content on air pollution provided by NCDC will be utilised. • Districts may also create their own content.

Dissemination plan of IEC

Sl. No.	IEC Content	Priority Districts	Dissemination Plan for 5 years (2022-27)	Mechanism	Timeline	Budget (in lakhs)				
						(2022-23)	2 years (2022-24)	(2024-25)	(2025-26)	(2026-27)
1.	Posters	26 districts	2 Posters for Healthcare facilities in all districts	Printing of _____ copies for state-level dissemination at health facilities, public places/ building By email to DNO for printing at district level and dissemination to health facilities, schools and other public/government buildings	Sep to Feb	36.00 lakhs	36.00 lakhs	50.00 lakhs	63.00 lakhs	63.00 lakhs
2.	Audio	26 districts	3 audios	Radio	October					
3.	Videos	26 districts	7 videos	Social media/TV/ public events	October					
4.	Social Media	26 districts	All above material + Relevant activity updates	Twitter WhatsApp groups (State DNO, Health facility group)	Throughout the year					

B. Public health advisories on Air Pollution and human health

Health advisories will be issued to alert population of potential harmful impact of impending environmental phenomena like elevated air pollution. Advisories issued at central level will also be forwarded to districts for public dissemination.

a. Observance of important days on Air Pollution and Health

Day	Activities
International Day of Clean Air for Blue Skies (September 7) Other days: • World Car Free Day (September 22) • World Environmental Health Day (September 26) • Green Consumer Day (September 28)	**IEC Campaigns** • Health facility-based patient awareness sessions • Audio-video spots broadcasting • Targeted awareness sessions: traffic police, schools, women, children • Street plays and local cultural activities, Rallies • Sports events • Competition: poster, poem/essay, quiz

b. Capacity building

To strengthen capacity of healthcare system to adapt/address illnesses/ diseases due to air pollution:

- Training materials and resources as shared by NPCCHH and NCDC website.
- Training calendar of the State proposed in coming months of August to September.

Refresher training to be conducted in August each year.

- To train medical officers in air pollution and its health impact and ARI surveillance reporting.
- To train community health workers, PRI leaders and vulnerable groups of the population in air pollution.
- To train specific groups i.e. women, Children, traffic police and municipal workers in the impact of air pollution on their health.

Training calendar:

TABLE 1: NPCCHH Training Plan at the State Level

Training Programme	Trainer	Participants	Training Content
Medical Officers (3 Days)	DNO	MO (DH, CHC, PHC)	Air pollution related illness
Community Health Care Workers (HWC) (2 Days)	MO	Community Health Workers (MPHW, ASHA)	
Panchayati Raj Institutions (1 Day)	MO, MLHP	Panchayati Raj Institutions, communities	

TABLE 2: Recommended schedule of training for 5 years (2022-2027)

Trainer	Priority Districts	Time of year	Content matter	Budget				
				2022-23	2022-24	2024-25	2025-26	2026-27
DNO-CC	26 Districts	July-September	Air pollution-related illnesses Cardio pulmonary diseases Allergic diseases	42.97 lakhs	42.97 lakhs	57.00 lakhs	70.00 lakhs	72.00 lakhs
MO	26 Districts	October-November						
District level trainers, MO, Health care workers	26 Districts	December						

Modules for the training will be provided by NPCCHH.

C. Surveillance on air pollution related illnesses, Presently on Acute Respiratory Illness (ARI) in context of Air Pollution

The objective of ARI surveillance is to identify the trend of air pollution related illness in context of the outdoor air quality at an area and its report is shared to all relevant authorities including public health authorities to minimize the impact of the air pollution through timely appropriate intervention measures.

ARI Surveillance Activity at State Level

City wise List of Sentinel hospitals selected for ARI surveillance activity:

Name of City	Name of Hospital	Public or Private	Type of Hospital (Medical College, District Hosp, Rural Hosp, Pediatric Hosp, Respiratory Disease Hospital)	Name of Nodal (reporting) Officer of hospital	Contact Details of Nodal Officer of hospital (Mobile No. & Email ID)
Naharlagun	TRIHMS	Public	Medical College	Dr Tamar Paley	9436839799
Pasighat	BPGH	Public	District Hospital	Dr David Panggan	7005614486

Status of ARI Surveillance data collection at states

- ARI surveillance in Arunachal Pradesh is currently being captured in IDSP/IHIP. Yearly number of ARI cases reported in IHIP district wise is shown in table below:

Sl. No.	District	2017	2018	2019	2020	2021
1	KRA-DAADI	131	324	934	1316	983
2	LONGDING	1168	1346	2847	1336	114
3	NAMSAI	3390	3749	5187	3655	2592
4	SIANG	1252	1772	2085	1401	634
5	ANJAW	2552	2926	1991	1246	155
6	CHANGLANG	4024	4202	3444	2160	341
7	DIBANG VALLEY	2219	1704	987	619	863
8	EAST KAMENG	3721	4452	5017	2379	968

Sl. No.	District	2017	2018	2019	2020	2021
9	EAST SIANG	6485	5359	8778	2854	1656
10	KURUNG JUMEY	234	318	746	697	174
11	KAMLE	0	0	0	0	697
12	LEPARADA	0	0	0	0	0
13	LOWER DIBANG VALLEY	3357	2895	2720	1169	329
14	LOHIT	5996	8537	6549	4816	5507
15	LOWER SUBANSIRI	3153	5406	5815	1548	39
16	LOWER SIANG	0	0	0	0	375
17	PAKKE KESSANG	0	0	0	16	15
18	PAPUMPARE	11010	6485	7037	3789	2554
19	SHI YOMI	0	0	0	0	0
20	TIRAP	2666	2321	1843	963	140
21	TAWANG	3840	3751	4894	2141	290
22	UPPER SUBANSIRI	1776	1030	914	555	499
23	UPPER SIANG	3487	3405	4027	1829	637
24	WEST KAMENG	5569	6374	8198	1648	19
25	WEST SIANG	4928	5690	6941	2568	844
	TOTAL	**70958**	**72045**	**80954**	**38705**	**20425**

- ARI surveillance for air pollution under NPCCHH will be initiated from September 2022 from the two notified sentinel hospitals and the District Hospitals of the state as per the reporting formats of NPCCHH.

Roles and Responsibilities

In order to implement the health adaptation plan on air pollution related illnesses, the following responsibilities will be undertaken with the identified state personnel:

	Responsibilities
SNO	• Finalization of IEC material and dissemination plan • Organize IEC campaigns at the state level on the observance of important environment-health days • Organize training sessions for district level and surveillance nodal officer • Facilitate training of medical officers in clinical aspects of air pollution's health impact • Monitor real time air quality data dashboard in proposed cities • Monitor AQI levels in the state especially in hotspots and NCAP cities

	Responsibilities
SNO	• Ensure reporting from sentinel hospitals and DNO • Ensure necessary health facility preparedness • Review surveillance reporting and monthly report submission by DNO • Submit report of activities • Review implementation of IEC and surveillance activities at all levels • Evaluate and update relevant section of SAPCCHH with support from the State Task Force • Liaison with State Pollution Control Board for AQI alerts and its dissemination • Liaison with the Department of Environment for combined IEC campaigns and information sharing on health indicators for targeted air pollution reduction activities • Awareness and action plan input sharing with the local bodies of cities with high AQI • Create organization support and strengthen Environmental Health cell to implement NPCCHH Vision, Goal and Objectives • Organize sensitization workshops for other stakeholders and line departments • Organize seminars on Air Pollution and conferences to share knowledge and action under NPCCHH • Collaborate with academic institute/s for support in updating SAPCCHH • Surveillance activity monitoring, vulnerability assessment and applied research • Advocate for reduction in source of air pollution
DNO	• Ensure IEC dissemination to the community level • Facilitate community-level IEC activities • Organize training for block health officers, medical officers, and sentinel hospital nodal officers with relevant training manuals • Organize training of vulnerable groups: police officers, outdoor works, women, children • Organize IEC campaigns at district level on observance of important environment-health days • Collect and monitor AQI levels in states especially in hotspots and NCAP cities • Ensure daily reporting from sentinel hospitals and compile the data • Analyze daily health data with AQI level to monitor trends and hotspot in health impacts • Submit analysed monthly reports to the SNO, NPCCHH Headquarters and other departments for necessary action • Submit report of activities • Update DAPCCHH with support from District Task Force • Advocate for reduction in source of air pollution
Surveillance hospital nodal officer	• Train hospital staff and clinician responsible for daily reporting in case indentation and reporting flow • Compile daily reports for the health facility and submit it to DNO and NPCCHH, Headquarters
Block health officer	• Conduct community level IEC activities • Ensure training of medical officers • Organize PRI sensitization workshop and training for vulnerable groups
Medical officer	• Conduct health facility-based IEC activities • Support community-level IEC activities • Be aware of AQI levels and health impact of air pollution • Ensure necessary health facility preparedness in early diagnosis and management of cases
Panchayati Raj Institutions	• Conduct community-level IEC activities

CHAPTER 7

Health Action Plan on Heat Related Illnesses

Health Adaptation Plan on Heat related illnesses

In India, a heat wave is considered if maximum temperature of a station reaches at least 40°C or more for plains, 37°C or more for coastal stations and at least 30°C or more for hilly regions. Following criteria are used to declare a heat wave:

a) Based on Departure from Normal

- *Heat Wave:* Departure from normal is 4.5°C to 6.4°C
- *Severe Heat Wave:* Departure from normal is >6.4°C

b) Based on Actual Maximum Temperature (for plains only)

- *Heat Wave:* When actual maximum temperature ≥ 45°C
- *Severe Heat Wave:* When actual maximum temperature ≥47°C

To declare a heat wave, the above criteria should be met at least at two stations in a Meteorological sub-division for at least two consecutive days. A heat wave will be declared on the second day.

The adverse health effects of hot weather and heat-waves are largely preventable. Prevention requires a portfolio of actions at different levels, these actions can be integrated in a defined heat–health action plan.

National Disaster Management Authority (NDMA) prepared Guidelines for Preparation of Action Plan-prevention and management of Heat wave-2017, wherein the roles and responsibilities of various agencies were identified. Emergency Medical Relief (EMR), Ministry of Health and Family Welfare prepared detailed guidelines on prevention and management of heat related illnesses – 2015 wherein patho-physiology, risk factors, clinical manifestations, management, prevention and public health action plan for managing heat related illnesses has been explained.

Heat Wave Situation in Arunachal Pradesh

The long-term analysis of trends in observed seasonal precipitation and temperature in Arunachal Pradesh using IMD gridded and temperature at daily time scale shows that the rise in temperature is appreciable with more significant in case of mean minimum temperature trends compared to maximum temperature (Table 2). Overall analysis indicates that Eastern Himalaya in general and Arunachal Pradesh in particular are experiencing widespread warming generally 0.01°C to 0.04°C per year (Sharma et al. 2009).

According to the PRECIS regional climate model, annual rainfall is projected to decrease by 5 to 15 per cent in the 2030s as compared to baseline and increase by 25 to 35 per cent towards 2080s. Decrease in rainfall is projected for all seasons except pre-monsoon for 2030s. Maximum temperature is projected to increase by 2.2°C to 2.8°C during 2030s as compared to baseline and towards 2080s the in- crease is projected by 3.4°C to 5°C. Minimum temperature is projected to increase by 1°C to 2.6°C during 2030s and by 2.8°C to 5°C during 2080s (SAPCC 2011).

Climatic conditions (long term averages)

Temperature Trends												
Mean Maximum Temperature Trends in °C per year												
Annual +0.02*		Winter +0.02*		Summer No trend			Monsoon No trend				Post Monsoon +0.02*	
Mean Minimum Temperature Trends in °C per year												
Annual +0.02*		Winter +0.02*		Summer +0.02*			Monsoon +0.01*				Post Monsoon +0.02*	
Monthly mean temperature trends in °C per year												
Months	Jan +0.02	Feb +0.03*	Mar -0.02	Apr -0.03*	May +0.03*	Jun NT	Jul -0.01	Aug NT	Sep NT	Oct +0.01	Nov +0.02*	Dec +0.02*
Rainfall Trends												
Annual -3.63		Winter -0.10		Summer No trend			Monsoon -2.30				Post Monsoon -0.83	
Monthly rainfall trends in mm per year												
Months	Jan -0.29	Feb -0.05	Mar +0.49	Apr +0.86	May -2.19	Jun -0.82	Jul +0.06	Aug -3.29	Sep +0.26	Oct -0.88	Nov -0.09	Dec -0.13

Increasing (+) and decreasing (-) trends significant at 95% level of significance are shown in bold and marked with '*' sign. 1 Agro-climatic classifications (Trends: 1950-2014, IMD)

Arunachal Pradesh is one of the 23 heat prone states in the country. Although Arunachal Pradesh might not have as high a temperature as compared to the meteorological subdivisions from north-west and central India, the temperature is still going to increase. The possibility of heat waves occurring in some pockets especially in the foothill districts remains very high and the following preventive measures are planned for the state:

A. Awareness Generation

To increase the general awareness among all the relevant stakeholders including vulnerable communities, health-care providers and policy makers regarding impacts of heat on human health and ways to address them.

B. IEC Campaign

The state will aim to create awareness through Information Education and Communication Activities (IEC) through development of locally and culturally acceptable messages in posters, audio, video, organising public health events, issuing advisories related to heat related illness.

The communication method will be largely through posters, hoardings/billboards, audio-video clips in mass media and messages in social media platform.

The dissemination plan for heat related IEC listed below will be from **March to July** every year**.**

Communication Method	Content
• **Posters:** At least 1-2 large wall poster and/ 1-2 foam board posters printed and disseminated in all healthcare facilities and all government educational institutes. • One each at each facility/ institute per year. • **Hoardings/billboard:** 5-10 billboards on Heat related illnesses will be placed in public areas • **Wall painting:** 1-2 wall paintings on air Heat and impacts on health per healthcare facility • **Audio-video clips** on heat and health will run in mass media ▪ 1-2 **video clips** of 1-2 minutes duration broadcasted on heat and health. ▪ 1-2 **radio clips** of 1-2 minutes duration broadcasted on heat and health • **Social media:** Twitter and/ Facebook will be utilised to post IEC and event related info with appropriate tagging.	• IEC content on Heat and HRI provided by NCDC will be utilised • Districts may also create their own content

Sl. No.	IEC Content	Priority Districts	Dissemination Plan for 5 years (2022-27)	Timeline	Budget (in lakhs)				
					(2022-23)	(2022-24)	(2024-25)	(2025-26)	(2026-27)
1.	Posters	26 districts	2 posters for healthcare facilities in all districts	February to March	36 lakhs	36 lakhs	50 lakhs	63 lakhs	63 lakhs
2.	Audio		4 audios (received from GOI)	April to May					
3.	Videos		7 videos (received from GOI)	April to may					

C. Public health advisories on Heat and human health

Health advisories will be issued to alert the population of the potential harmful impact of an impending heat wave. Advisories issued at the central level will also be forwarded to districts for public dissemination as per the above- detailed dissemination plan.

D. Capacity building

To strengthen the capacity of the healthcare system to adapt/address illnesses/diseases due to heat, the training materials and resources as shared by NCDC are used. The state develops the relevant material and organizes the trainings for different levels of stakeholders. The capacity-building plan is detailed in the table below:

Particulars	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, Consultant	• Heat-health impact, prevention measures • Surveillance reporting and analysis with weather parameters • Health facility preparedness	March

Particulars	Trainer	Topics	Timeline
Health facility level (MO of DH/CHC/PHC)	District Level Trainers (DNO-CC)	• Heat-health impact, prevention measures • Surveillance case identification and reporting • Health facility preparedness • Clinical management of HRI	March
Community Health care workers (MPH, ASHA, ANM etc)	District Level Trainers, MO	• Heat-health impact prevention • Indoor and outdoor mitigation measures	March-April
Panchayati Raj Institutions	District level trainers, MO, Health care workers	• Heat-health impact prevention • Indoor and outdoor mitigation measures	March -April

Table 2: Schedule of training for 5 years (2022-2027)

Trainer	Priority Districts	Time of year	Content matter	Budget				
				2022-23	2022-24	2024-25	2025-26	2026-27
DNO-CC	26 Districts	March to April	Heat related Illnesses	42.97 lakhs	42.97 lakhs	57 lakhs	70 lakhs	72 lakhs
MO		March to April						
District level trainers, MO, Health care workers		May to June						

E. Surveillance on heat related illnesses

Daily Heat related illnesses surveillance reporting under NPCCHH in Arunachal Pradesh has been initiated 1st April 2022 in all the district health facilities from Primary Health Center and above. The months April-June are identified to be key months for monitoring and reporting heat-related illnesses and incidences.

Roles and Responsibilities

The roles and responsibilities of the health department, medical colleges and hospitals, health centres, and link workers to implement the health adaptation plan for heat- related illnesses are detailed in the table below:

Department	Season	Roles and responsibilities
Health department	During **Pre-Heat** Season (Annually from January through March)	• Create a list of high- risk areas (heat-wise) of districts/blocks/cities • Update surveillance protocols and programs, including tracking of daily heat-related data • Develop/revise and translate IEC in the local language • Make a communication plan for the dissemination of heat- related alerts or education materials • Check inventories of medical supplies in the health centers

Department	Season	Roles and responsibilities
		• Identify cooling centers and barriers to access cooling centers • Capacity building of health care personnel to detect and treat heat- related illnesses • Community involvement for workers and trainers' education • Issue health advisory to healthcare personnel based on IMD seasonal prediction or warning • Reassess 'Occupational Health Standards' • Ensure inter-sectoral convergence and coordination for improving the architecture, design, energy- efficient cooling and heating facility, increase in plantation i.e. Climate Resilient Green Building Design.
	During **Heat** Season (Annually from March through July)	• Ensure real-time surveillance and monitoring system in case of extreme event • Prepare rapid response team • Distribute "Dos and Don'ts" to community • Effectively send a "Don't Panic!" message to community • Ensure access to Medical Mobile Van in the Red Zone • Ensure additional medical vans available • Ensure strict implementation of legislative/regulatory actions as per Occupational Health Standards. • Coordination with meteorological department for analysing cases and death data with meteorological variables like maximum temperature and relative humidity
	During **Post-Heat** Season (Annually from July through September)	• Participate in annual evaluation of heat action plan • Review revised heat action plan
Medical College and Hospitals	During **Pre-Heat** Season (Annually from January through March)	• Adopt heat-focused examination materials • Get additional hospitals and ambulances ready • Update surveillance protocols and programs, including to track daily heat-related data • Establish more clinician education • Continue to train medical officers and paramedics
	During **Heat** Season (Annually from March through July)	• Adopt heat-illness related treatment and prevention protocols • Equip hospitals with additional materials • Deploy all medical staff to be on duty • Keep emergency ward ready • Keep stock of small reusable ice packs to apply to PULSE areas • Report heat stroke patients to DSU daily • Expedite recording of cause of death due to heat related illnesses
	During **Post-Heat** Season (Annually from July through September)	• Participate in annual evaluation of heat action plan • Review revised heat action plan

Department	Season	Roles and responsibilities
For health centres and link workers	During **Pre-Heat** Season (Annually from January through March)	• Distribute pamphlet and other materials to community • Sensitize link workers and community leaders • Develop and execute school health program • Dissemination of materials in slum communities • Coordinate outreach efforts with other community groups, non-profits, and higher education
	During **Heat** Season (Annually from March through July)	• Recheck management stock • Modify worker hours to avoid heat of day • Visit at-risk populations for monitoring and prevention • Communicate information on tertiary care and 108 service
	During **Post-Heat** Season (Annually from July through September)	• Participate in annual evaluation of heat action plan • Review revised heat action plan

CHAPTER 8

Health Action Plan on Extreme Weather Event-Related Health Issues

Introduction

Climate change can result in more hot days, resulting in more periods of 'drought', 'dust storms', or 'heavy rains (precipitation)', and even 'flooding'. This leads to an increased impact on the health of the human population due to injuries, hypothermia, hyperthermia, drowning, and indirectly through population dislocation, crowding, poor living conditions, the faeco-oral transmission of gastro-intestinal pathogens causing water and food-borne illnesses, respiratory illness and other infectious diseases (e.g., leptospirosis, vector-borne disease, cholera and also mental illnesses)48-50. The reason primarily is due to contamination of water and sewage disposal. The details of the impacts on health due to extreme weather events is enlisted in the table below:

Table: Various types of diseases prevalent during disasters in the state

Weather Extremes and Disasters		Health Implications
Primary	Secondary	
Heavy Rainfall	• Floods • Flash floods • Urban floods • Landslides/slope failure	Injuries, water-borne diseases, vector-borne diseases, death, drowning, hypothermia, and animal bites Indirect (infected wounds, complications of injury, poisoning, poor mental health, communicable diseases, and starvation)
Temperature extremes	• Heat wave • Cold wave • Fires	• Dehydration, heat cramps, heat stroke; accelerated respiratory disease and cardiovascular disease • Heart attacks, injuries, frost nip and frost bite, hypothermia, immersion foot, influenza, norovirus, asthma, sore throat • Burns, mortality, wheezing, coughing, sore eyes, respiratory issues, heat induced illnesses, carbon Monoxide poisoning

State Vulnerability to extreme events

Arunachal Pradesh is prone to disasters such as floods, flash floods, landslides, earthquake, erosions, hailstones, high wind speed/thunderstorm, etc. below depicts the vulnerability of districts to various hazards:

Sl. No.	Districts	Vulnerability to Earthquake	Vulnerability to Flood / Flash Flood	Vulnerability to landslide	Vulnerability to Fire/ Forest Fire
1.	Tawang	Very High	Very High	Very High	High
2.	West Kameng	Very High	Very High	Very High	High
3.	East Kameng	Very High	Very High	Very High	High
4.	Papumpare Urban Rural	Very High Very High	Very High Very High	Very High Very High	High High
5.	Lower Subansiri	Very High	Very High	Very High	High
6.	Kurung Kumey	Very High	Very High	Very High	High
7.	Upper Subansiri	Very High	Very High	Very High	High
8.	West Siang	Very High	Very High	Very High	High
9.	Upper Siang	Very High	Very High	Very High	High
10.	East Siang	Very High	Very High	Very High	High
11.	Siang	Very High	Very High	Very High	High
12.	Lower Dibang Valley	Very High	Very High	Very High	High
13.	Dibang Valley	Very High	Very High	Very High	High
14.	Lohit	Very High	Very High	Very High	High
15.	Namsai	Very High	Very High	Very High	High
16.	Anjaw	Very High	Very High	Very High	High
17.	Tirap	Very High	Very High	Very High	High
18.	Changlang	Very High	Very High	Very High	High
19.	Longding	Very High	Very High	Very High	High

Seasonality of Hazards in Arunachal Pradesh

Sl. No.	Nature of Hazard	Season/ Period
1	Flood/ Flash flood	March to October
2	Landslides	March to October
3	Cyclone/ High Speed wind	December to May
4	Earthquake	Any time of the year
5	Drought	Subsequent to monsoon failure (to be notified as and when required by the Department of Agriculture)
6	Epidemics	Any time of the year and especial during monsoon period.
7	Fire	Any time of the year but maximum during winter and dry spell.

As the state is prone to floods and landslides, the trend of morbidity caused by these events is mentioned in the table below:

Loss of lives due to landslide/Flashflood/Flood

Sl. No.	Place	Year of Occurrence	No. of Death
1	Naharlagun	2009	4
2	State	2010	44
3	State	2011	47
4	State	2012	70
5	State	2013	52
6	State	2014	61
7	State	2015	29
8	State	2016	42
9	State	2017	60
10	State	2018	7
11	State	2019	2
12	State	2020	8

Source: SEOC, Itanagar

The State approach for disaster prevention and mitigation will be multi-hazard as it is vulnerable to all-major natural hazards such as floods, earthquake, landslide, rock-fall, flashfloods, cyclones, high speed winds, thunderstorms, hailstorms, heavy snow, fire, forest fire etc.

Activities planned for awareness generation on the health impacts of diseases prevalent during disasters

Target population:

- **Vulnerable districts/hotspots:** listed above
- **Vulnerable groups:** Children, women, older adults, traffic police, outdoor workers/vendors

i. Annual IEC dissemination plan for extreme weather events and their health impact

IEC type	Material	Timeline	Mechanism
Advisory	From SDMA and NPCCHH	Seasonal	By email to DNO for further dissemination to health facilities
Early warning	Bulletins/ advisory by IMD (storm, cyclone), CWC (flood) sent by NPCCHH	Seasonal	• Health department/other government website/application • Digital display of temperatures on public places and health facilities
Posters	• 6 posters on various EWE and health impacts • Posters on heat and health impacts	Seasonal, as needed	• Printing of copies for state-level dissemination at health facilities, public places/buildings • By email to DNO for printing at district level and dissemination to health facilities, schools and other public/government buildings

IEC type	Material	Timeline	Mechanism
Wall painting	Using available material	July-September	• In schools and selected colleges • In health facilities
Hoardings	• Posters (above)	Seasonal, as needed	• To be planned with Municipalities
Digital display	• 5 GIF • Video messages	Seasonal, as needed	Display in health facilities Public digital display boards in major cities
Social medial	All the above material + Relevant activity updates	Seasonal, as needed	• Facebook and Twitter handle of state IDSP, NHM • WhatsApp groups (State DNO, Health facility group)

ii. Observance of important environment-health days

Day	Activities on Heat-Health
• International Day for Disaster Risk Reduction	**IEC Campaigns** • Audio-video spots broadcasting • Targeted awareness sessions: women, children, occupational groups • Mock drill, disaster response exercise • Sports events • Competition: poster, poem/essay, quiz **Health facility level activities** • Health facility-based patient awareness sessions • Conduct assessment of disaster vulnerability/energy/ water conservation measures

Capacity Building

Capacity Building will be initiated under this component based on the guidelines developed under the National Action Plan on Disaster related Health Issues. Furthermore, trining modules developed by NCDC and shared with the state, will be modified, and further training materials will be developed based on the same for the trainings at various levels at state, district, sub-district, healthcare facility and community level as mentioned below:

Levels of Training modules

- State-District level training modules
- Medical officer training
- Para medical officers & Health care workers
- Community level training: vulnerable population group such as women/ children/ elderly/ different type occupations

State-Level/District-Level Supporting Training institutes

Training on Heat-related illnesses diseases may be expanded to include other climate sensitive health issues specifically extreme weather events.

ii. Annual training plan for Extreme Weather Events and Health

Particulars	Trainer	Topics	Timeline
District level (DNO-CC, trainers)	State Level Trainers SNO-CC, Consultant	• Climate change and impact of extreme weather events in India • Formation of disaster management committees and plans • Health facility vulnerability, resilient measures and disaster preparedness • Disaster response in coordination with state/district disaster management authority • Post-disaster health impact assessment and response	February
Health facility level (MO of DH/CHC/PHC)	District Level Trainers DNO-CC	• Health facility disaster vulnerability assessment • Disaster management committee and plan • Climate resiliency measures (structural/functional) • Health facility preparedness for EWE/disaster response • Post-disaster surveillance and damage assessment	February
Community Health care workers (MPH, ASHA, ANM etc)	District Level Trainers, MO	• Climate change and health impact of extreme weather events • Disaster planning and response	February-March
Panchayati Raj Institutions	District level trainers, MO, Health care workers	• Climate change and health impact of extreme weather events • Disaster planning and response with community participation	February-April

Strengthening Health Sector Preparedness

i. **Early warning:** Dissemination of early warnings for floods, cyclones, landslides etc. to the health facility level and community level

ii. **Surveillance**

- Post-disaster health impact assessment
- Support post-disaster surveillance of communicable disease, health facility affected conducted by SDMA, IDSP or other agencies

iii. **Health Facility Preparedness**

- Vulnerability assessment of health facility in context of climate change-extreme weather events
- Identify structural changes/retrofitting measures at the facility level to equip the healthcare facility
- Formalize disaster management plan and committee
- Emergency procurement arrangements and the functioning of essential health services (safe water, immunization, maternal-child care etc)
- Post-disaster damage assessment and referral plan in case of health facility damage
- Ensure routine monitoring and maintenance of support functions (water quality, waste management)
- Establish Sustainable procurement committee

iv. Revision of Health Action Plan on Disaster-Related Health Issues in State Action Plan on Climate Change and Human Health (SAPCCHH)

The section will be revised annually after December with support from coordinating agencies based on updated surveillance data, its analysis with weather parameters, targets achieved, and predicted climate variability with support from multi-sectoral task force.

Roles and Responsibilities

Authority	Responsibilities
SNO	• Disseminate early warnings to the district level • Finalization of IEC material and dissemination Plan • Formalize intersectoral coordination for disaster planning, management and response with SDMA/IMD and other response departments • Organize training of district level officers • Facilitate assessment and implementation of climate resilient measures in health facilities • Review implementation of IEC, training and surveillance activities at all levels • Evaluate and update relevant section of SAPCCHH with support from State Task Force • Create organizational support and strengthen Environmental Health cell to implement NPCCHH vision, Goal and Objectives • Organize sensitization workshops for other stakeholders and line departments • Collaborate with academic institute/s for support in updating SAPCCHH, Surveillance activity monitoring, training of health care professionals, vulnerability assessment and applied research • Submit reports of activities on EWE and health under NPCCHH
DNO	• Disseminate early warning to block and health facility level • Ensure IEC dissemination at the community level and facilitate community level IEC activities • Organize training for block health officers and medical officers with relevant training manuals • Formalize intersectoral coordination for disaster planning, management and response with SDMA/IMD and other response departments • Liaison with other departments for combined IEC campaigns, coordinated response and information sharing of health indicators for targeted action • Identification and communication of evacuation routes and relief camps • Support planning and management of health care services in relief camps • Provide necessary IEC on health and sanitation in relief camps • Conduct sensitization of vulnerable groups: police officers, outdoor works, women, children etc • Organize IEC campaigns at district level on observance of important environment-health days • Facilitate disaster vulnerability assessments in health facilities and maintain records of such assessment and health facility damage due to EWE • Update DAPCCHH with support from District Task Force • Submit reports of activities on EWE and health under NPCCHH
Block health officer	• Conduct community level IEC activities • Ensure training of medical officers • Organize PRI sensitization workshop and training for vulnerable groups • Facilitate disaster vulnerability assessments in health facilities and maintain records of such assessment and health facility damage due to EWE

Authority	Responsibilities
Medical officer	• Conduct health facility-based IEC activities • Support community level IEC activities • Preparation of Disaster Management Plans and hospital safety plan • Assessment of health facility in context of climate change-extreme weather events • Identifying structural changes/retrofitting measures at the facility level to equip the healthcare facility • Ensuring routine monitoring and maintenance of support functions (water quality, waste management) • Health facility preparedness for seasonal events
Panchayati Raj Institutions	• Conduct community level IEC activities • Community involvement in planning and demonstration of measure taken before-during-after an EWE

CHAPTER 9

Health Action Plan on Vector-borne Illnesses in Context of Climate Change

Introduction

Effect of variation in climate has been well established for illnesses which are spread through vectors or which are transmitted from animals to humans.

Although the National Vector Borne Disease Control program encompasses 6 diseases, namely, Malaria, Filaria, Japanese Encephalitis, Kala Azar, Dengue and Chikungunya, the state of Arunachal Pradesh is devoid of Filaria and Kala Azar till date. In the following tables reported cases of last five years for Malaria, Dengue and Chikungunya are mentioned.

Table: Recorded Malaria cases in the past 5 years

Sl. No.	Districts	Years				
		2016	2017	2018	2019	2020
1	Anjaw	12	2	0	0	0
2	Changlang	201	89	36	11	3
3	Dibang Valley	2	0	0	0	0
4	East Kameng	275	116	112	17	0
5	East Siang	374	203	93	13	2
6	Kra Daadi	4	0	0	0	0
7	Kurung Kumey	43	21	8	0	2
8	Lohit	168	66	26	3	8
9	Longding	165	111	37	3	0
10	Lower Dibang Valley	252	58	11	2	0
11	Lower Siang	DNA	DNA	18	0	1
12	Lower Subansiri	34	25	11	2	1
13	Namsai	422	208	25	10	6
14	Papum Pare	75	75	23	6	3
15	Siang	35	33	5	4	2
16	Tawang	DNA	2	0	0	0

Sl. No.	Districts	Years				
		2016	2017	2018	2019	2020
17	Tirap	276	45	29	10	1
18	Upper Siang	48	31	23	0	0
19	Upper Subansiri	500	284	143	47	1
20	West Kameng	77	64	24	8	0
21	West Siang	165	111	9	3	2
22	Total	3128	1544	633	139	32

Table: Recorded Dengue, Japanese Encephalitis and Chikungunya cases in the past 5 years

Diseases	Years				
	2016	2017	2018	2019	2020
Dengue	15	8	1	50	1
Japanese Encephalitis	5	8	21	44	1
Chikungunya	13	1	0	13	0

Causes of Vector Borne diseases in the state:

1. Geography of the state is favourable for the breeding and survival of vectors.
2. Abundant rainfall that keeps all the breeding sites filled with water throughout the year.
3. Abundant forest that acts as good hiding places for vectors.
4. Indulgence of local population in forest related activities that lead to contact with man and vector.
5. Rampant deforestation and construction activities that increase the breeding sites and man-vector contact.
6. Inadequate awareness among the masses regarding the mosquito bionomics and thereby failure to protect oneself from a vector contact.

In accordance with the recorded cases of vector-borne diseases in the state, following districts have been identified to be on priority:

1. Namsai

2. East Siang

3. Upper Subansiri

The socio-economic data of the vulnerable population in these districts is indicated in the tables below:

Namsai district		
Sl. No.	Category of vulnerable population	Total count for the district (2011)
1	Elderly people age more than 60 years	6536
2	Children's below 5 years of age	11602
3	Pregnant women	2337

East Siang district		
Sl. No.	**Category of vulnerable population**	**Total count for the district (2011)**
1	Elderly people age more than 60 years	6773
2	Children's below 5 years of age	12023
3	Pregnant women	2422

Upper Subansiri district		
Sl. No.	**Category of vulnerable population**	**Total count for the district (2011)**
1	Elderly people age more than 60 years	6656
2	Children's below 5 years of age	11815
3	Pregnant women	2380

Roles and Responsibilities

In view of the existing situation of the vector-borne diseases recorded in the state of Arunachal Pradesh, following actions will be taken by the relevant health department officials to check and reduce the same.

Role of Health Sector (State Nodal Officer and Task Force)

1. Programme Officer for National Programs for Control of Vector-borne Diseases (NVBDCP) must consider climate variability as an important factor for assessment of morbidity and mortality statistics and develop/ adapt health micro-plan based on recent VBD diseases trend.
2. Map vulnerabilities: population at risk, geo-climatic conditions, seasonal variation, change in population demography, migration, available resources, healthcare infrastructure, laboratories, etc.
3. Strengthen/develop active and passive surveillance and establish sentinel sites for vector-borne diseases.
4. Capacity building and increasing awareness for individuals, communities, health care workers through involvement of various media channels, campaigns and training workshops.
5. Develop or translate IEC on effects of climate change on VBDs in the local language, and make a communication plan for dissemination of health related alerts/ education materials.
6. Ensure adequate logistic support, including equipment and other treatment modalities and supplies for case management at all levels of health care and also under 'Emergency response Plan' in case of any disaster or an outbreak.
7. Vaccination of animals and animal handlers for vaccine preventable diseases.
8. 'Environmental Health Impact Assessment' of new development projects.
9. Early warning system for vector borne diseases.
10. Enforce legislation and regulations of vector borne diseases.

Coordination with other sectors for reducing Zoonotic diseases

(As per the suggested sectors in the NVBDCP)

- Inter-sectoral collaboration for vector control.
- Providing equipment and other related logistics for control of vectors.
- Elimination and reduction of vector breeding sites.
- Encourage research on new safe and effective control measures.

Intervention by veterinary task force

- Prevention and control of animal diseases and zoonoses.
- Vaccination of animals & control on population of stray animals.
- Safe destruction of carcasses and other material of animal origin.
- The care of 'food animals', including collection, feeding, sheltering, slaughtering etc.

Intervention by Community & Individual

- Eliminate/ control small and manmade vector breeding sites Make barriers for human dwellings to keep stray animals away from human dwellings by fencing the residential areas especially if in approximation to forests etc.
- House protection by using screening windows, doors and fencing the garden etc.
- Use self-protection measures like protective clothing etc.

Action plan to reduce the burden of Vector-borne diseases

Awareness Generation

To increase general awareness among all the relevant stakeholders including vulnerable communities, health-care providers and policy makers regarding the impacts of vector-borne diseases and ways to address them.

a. IEC Campaign

The state will aim to create awareness through IEC activities and development of locally and culturally more acceptable messages in posters, audio, video, organising public health events, issuing advisories related to vector-borne diseases.

The communication method will be largely through posters, hoardings/billboards, audio-video clips in mass media and messages in social media platform.

The dissemination plan for Vector-Borne Diseases (VBD) IEC is listed below. This will be organized between June to August every year and also after extreme weather events like floods**:**

Communication Method	Content
• **Posters:** At least 1-2 large wall poster and/ 1-2 foam board posters printed and disseminated in all healthcare facilities and all government educational institutes. • One each at each facility/ institute per year. • **Hoardings/billboard:** 5-10 billboards on Vector borne diseases will be placed in public areas • **Wall painting:** 1-2 wall paintings on air VBD on health per healthcare facility ▪ **Audio-video clips** on VBD will run in mass media ▪ 1-2 **video clips** of 1-2 minutes duration broadcasted ▪ 1-2 **radio clips** of 1-2 minutes duration broadcasted • **Social media:** Twitter and/ Facebook will be utilised to post IEC and event related info with appropriate tagging.	• IEC content on VBD provided by NCDC will be utilised • Districts may also create their own content

Dissemination Plan

IEC type	Material	Timeline	Mechanism
Posters	• Posters on VBD and climate change • Adopt posters made by state NVBDC • Posters on VBD and climate change	• After extreme weather events i.e. floods, cyclone, and other natural disaster i.e. earthquake • Collaborate with NVBDCP	Collaborate with NVBDCP
Wall painting	-	-	In schools and selected colleges
Hoardings	Posters	-	• To be planned with hotspot Municipalities and District
Social medial	• All the above material + Relevant activity updates	-	• Facebook and Twitter handle of state IDSP, NHM • WhatsApp groups (State DNO, Health facility group)

A. Capacity building

To strengthen the capacity of the healthcare system to adapt/address vector borne diseases due to climate change, following indicated capacity building and training plan will be deployed at the state level. Training materials and resources as shared by NCDC will be used. Additional material to support the developed modules, facilitator guides, feedback and monitoring formats and other relevant materials as per the requirement will be developed at the state level. Training calendar is proposed for the months of April to June. Refresher trainings will be planned and conducted in April each year.

Training plan			
Particulars	**Trainer**	**Participants**	**Training content**
Medical officers (3 days)	District Level Trainers DNO-CC	MO (DH/CHC/PHC)	Climate change and VBD
Community Health care workers (HCW) (2 days)	District Level Trainers, MO	Community Health Workers (MPW, ASHA)	
Panchayati Raj Institutions (1 day)	District level trainers, MO, Health care workers	Panchayati Raj Institutions, communities	

CHAPTER 10

Action Plan for Green and Climate Resilient Health Care Facilities

Health care facilities (HCF) are the first and last line of defense against the drivers of the health impact of climate change. They provide essential services and care to the population affected by extreme weather events and long-term climate hazards (adaptation) and conversely, require to reduce their own contribution to the climate change producing greenhouse gas (GHG) emissions (mitigation). Healthcare system resilience is defined as the capacity of health actors, institutions, and populations to prepare for and effectively respond to crises; maintain core functions when a crisis hits; and, informed by lessons learned during the crisis, reorganise if conditions require it. It is imperative to build health systems and facilities to withstand the impacts of climate change while deploying climate-smart health care as an anchor strategy to achieve more equitable access to care, resulting in healthy, resilient communities.

Building resilience and contributing to environmental sustainability are major components to strengthen the HCF to continue functioning with minimal negative environmental and health impacts. The National Programme on Climate Change and Human Health (NPCCHH) is engaging critically with strengthening the healthcare services and facilities to adapt to as well as mitigate the impacts of climate change. The key components recognized under the programme include:

- Energy
- WASH (water, sanitation, hygiene)
- Water Conservation
- Waste management
- Infrastructure development (retrofitting)

These components have been laid down in accordance with the global commitments of the country toward establishing resilient infrastructure and healthcare facilities. One of the seven global targets of The Sendai Framework for Disaster Risk Reduction is to "substantially reduce disaster damage to critical infrastructure and disruption of basic services, among them health and educational facilities, including through developing their resilience by 2030". SDG 9 (Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation) calls for the development of quality, reliable, sustainable, and resilient infrastructure, and also upgrading infrastructure and retrofitting industries (including health care) to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and processes.

National Programme on Climate Change and Human Health (NPCCHH) is dedicated to health response to climate change through five key objectives including capacity building of the health workforce and adaptation of environmentally sustainable and climate-resilient infrastructure measures.

To be able to mitigate the impacts of climate change, the following key components have been identified under the Green & Resilient Infrastructure objective of NPCCHH. Based on the same, Arunachal Pradesh proposes an action plan to strengthen the existing healthcare systems.

Some of these would include:

Energy Efficiency

1. **Replacing the existing non-LED lights with LEDs:** Replacing the incandescent bulbs with LEDs leads to 75% less energy consumption. Each LED light saves approximately INR 700-1400 over the course of a year. The guiding principle in this respect would be:

   1.1 Healthcare facilities would have a policy on purchasing and using energy- efficient equipment and devices. The facilities would gradually phase out the incandescent bulbs with LEDs.

2. **Installing occupancy sensors**: Occupancy sensors light areas that are occupied by people, thereby reducing energy costs by reducing energy waste. The guiding principles in this respect include:

   2.1 The Occupancy sensor would be installed in those areas where people may not frequently be moving, such as doctor and administration offices, and non-patient floors and hallways, office areas, toilets and washroom facilities, and storerooms in the HCFs.

3. **Energy saving appliances:** ENERGY STAR- qualified office and imaging products consume 30-75 percent less energy than standard equipment. The guiding principles in this respect include:

   3.1 The healthcare facility would have the policy to purchase BEE labelled/ISI marked office equipment and appliances.

   3.2 It would aim to use above three-star rating equipment such as computers, monitors, printers, scanners, external power adaptors, copiers, fax machines, digital duplicators, mailing machines, water coolers, room air conditioners, refrigerators, and lighting equipment.

4. **Energy audit**: An energy audit identifies all energy end-uses within the building, estimates how much energy is used in each department, and determines the amount of energy used in relation to the desired values. The guiding principles in this respect include:

   4.1 The HCFs would develop a plan for the energy audit to assess the level of energy consumption.

   The guiding principles in this respect include:

   4.2 The responsibility for the energy audit would be of the IPC committee of the facility. If the healthcare facility lacks qualified staff, then the energy audit would be conducted by the state health department as well.

   4.3 The energy audit would also consider load management, poor maintenance aspects, and extreme temperature to avoid fire-related accidents. Audit would be conducted in the facility biannually.

   4.4 Installing sub-meters in the facility premises would be useful in understanding how much energy is used across the healthcare facility

5. **Solar energy:** Healthcare facilities both in urban and rural areas consume a lot of energy throughout the day as the electrical equipment used directly or indirectly to treat patients requires uninterrupted power. The guiding principle in this area would be:

    5.1 The state would, in a phased manner, install PV solar panels in unused spaces like the roof of the facility. This would reduce grid-based electricity consumption and decrease the peak demand of a facility, which means the organization has lower operating costs, and hence these saved costs can be utilized for better patient care.

Water Conservation

Water conservation: In an HCF, sanitary fixtures consume 42 per cent of water while heating ventilation and air conditioning (HVAC) consumes 23 per cent of water, so it is recommended that major water-consuming area needs to be focused on reducing water consumption. The guiding principles for water conservation in a HCF would be as follows:

1. The healthcare facility would develop a **strategy for the optimum usage of water**.

    1.1 The HCFs would develop a plan for the conservation of water. e.g., water- efficient fixtures, dual flush mechanism, sensor operated urinals, waterless urinals, rainwater harvesting.

    1.2 The HCFs would have a plan for the wastewater treatment. e.g., sewage treatment plant and effluent treatment plant at sites of generation of contaminated grey water, like pathology.

2. The HCFs would develop a **programme/plan for the conservation of water**

    2.1 The HCFs would have a water management programme for the conservation of water by establishing a team, setting goals with timelines, conducting water audits, determining the cost of water and preparing an action plan.

3. The HCFs would have an ongoing **educational programme** for the efficient usage and conservation of water for all the stakeholders (staff, patient and visitors):

    3.1 The HCFs would have a plan to train the staff on water savings techniques.

    3.2 The HCFs would develop a wide variety of methods to communicate through IEC materials, new and/or revised operating guides and manuals.

Climate resilient health care infrastructure: It is essential that HCF planning and designing should be responsive to local climate and hazard profile[1] of the district. Strong focus should be given to designing all aspects of infrastructure and services as per relevant IS standards, building codes and local byelaws, and history of emergencies in the district to ensure patient safety and continuity of health service during emergencies. Few key interventions that would be undertaken to make the HCFs into green buildings would include:

New Buildings

1.1 Climate risk assessment at the time of planning and designing the building

1.2 Use of high-performance glass on windows, doors, and roofs to prevent the heat inside and allows sunlight and fresh air to enter the room

1 For district hazard profile, please refer District Disaster Management Plan with the help of District Disaster Management Authority.

1.3 Use double glazing glass on windows; it provides thermal and optical properties to the building and reduce the noise level

1.4 Insulation of building from inside and outside in colder regions of the country

1.5 Ensure the plinth level is above the high flood level as known locally or storm surge level (in costal districts) and make the building accessible with ramps and railing to create a barrier free environment[2]

1.6 Installation of Rainwater Harvesting System

1.7 Installation of alternative energy systems

1.8 Installation of STP & ETP

Existing Infrastructure

1.9 Introduction of electronic patient records in the facility to reduce the use of paper

1.10 Availability of 10-30 per cent area for the herbal garden in the facility

1.11 Floor and wall finishes are conducive for infection prevention control practices

1.12 Including services for climate sensitive diseases

1.13 Modifications in the critical care rooms to make them functional during disasters

1.14 Introducing

1.15 Installation of Rainwater Harvesting System

1.16 Installation of alternative energy systems

1.17 Installation of STP & ETP

2 Refer, http://disabilityaffairs.gov.in/content/page/accessible-india-campaign.php

Implementation Plan

1. Health Sector Strengthening

Activities	Priority Districts	Identified Health Facilities	Timeline	Budget (in lakhs)				
				2022-23	2023-24	2024-25	2025-26	2026-27
Energy Audit	5 districts- (Papum Pare, Lower Siang, East Siang, Namsai and Changlang)	PHCs, CHCs, SC/HWC	January to February	130.00 lakhs	260.00 lakhs	240.00 lakhs	240.00 lakhs	-
Energy Saving appliances								
Led installation-	5 districts- (Papum Pare, Lower Siang, East Siang, Namsai and Changlang)	PHCs, CHCs, SC/HWC	December					
Solar Panels installation	5 districts- (Papum Pare, Lower Siang, East Siang, Namsai and Changlang)	PHCs, CHCs, SC/HWC	December					
Rainwater Harvesting	2 districts- (Papum pare and East Siang)	PHCs, CHCs, SC, DH	January					
Retrofitting of Health care facilities	2 districts- (Papum Pare and East Siang)	PHCs, CHCs, SC, DH	February					

2. Awareness Generation

	Responsibilities
SNO	• Finalization of IEC material and dissemination plan • Organize training sessions for the district-level officers and trainers • Identify health facilities for priority implementation based on disaster and health facility vulnerability • Identify relevant state level nodal agencies and collaborate with them for assessment of health facilities for implementation of measures • Facilitate and monitor necessary assessments at the health facility level • Facilitate implementation of structural and functional measures at the health facility level • Monitor the implementation of the activities • Support districts to identify sources of funding • Advocate for reduction in source of greenhouse gas emissions

	Responsibilities
DNO	• Conduct training for block health officers, medical officers, with relevant training manuals • Support conduction for the following assessment at the health facility level ▪ Energy audit ▪ Water audit • Support the following functional measures at the health facility level ▪ Water committee ▪ Sustainable procurement committee ▪ Operational measures to make health facilities function during the disasters or power cut • Coordinate with other agencies for assessment and implementation of identified structural and functional measures • Update DAPCCHH with support from District Task Force
Block health officer	• Ensure training of medical officers • Organize PRI sensitization workshop • Coordinate with other agencies for assessment and implementation of identified structural and functional measures
Medical officer	• Conduct health facility assessment ▪ Energy audit ▪ Water audit • Lead following functional measures ▪ Water committee ▪ Sustainable procurement committee ▪ Operational measures to make health facility functioning during disasters or power cut • Support community level IEC activities • Identify local funding opportunities: e.g. CSR initiative, NGO funding
Panchayati Raj Institution	• Support retrofitting and new health facilities with local funding source and community involvement

- Sensitization workshop on Sustainable Procurement
- Awareness on energy efficient measures and water conservation measures

IEC Dissemination Plan

Dissemination of IEC material

IEC type	Material (Link/ Annexure)	Dissemination Timeline	Targeted districts	Budget				
				2022-23	2023-24	2024-25	2025-26	2026-27
Posters	2 Posters for Healthcare facilities in 6 Districts	November	26 districts	6 lakhs	6 lakhs	8 lakhs	17 lakhs	20 lakhs
Wall painting			26 Districts					
Audio-Visual			26 Districts					

Roles and Responsibilities

The table below highlights the roles and responsibilities of the associated staff to help support green climate and resilience infrastructure development in order to strengthen healthcare infrastructure.

3. Capacity Building

The plan for training of ToTs, DNO-CC and Medical officers on guidelines and operational framework of Green and Climate resilient measures in Health Care Facilities is mentioned in the table below:

Sl. No.	Activities	Priority Districts	Timeline	Budget				
				2022-23	2023-24	2024-25	2025-26	2026-27
1.	Training of ToTs	26 districts	November	42.97 lakhs	42.97 lakhs	57 lakhs	70 lakhs	72 lakhs
2.	Training of DNO-CC		December					
3.	Training of Medical Officers		December					

PART III

Budget

CHAPTER 11
Budget

FY 2022-2024

Particulars	Unit Cost (Rs. Lakhs)	Quantity/Target	Budget Approved (Rs. Lakhs) Year 1	Year 2	Year 3	Remarks	State Plan
Infrastructure-Civil Works (I&C)				**130.00**	**260.00**		
Old/ongoing work							
New Work-Climate Resilient Health Facilities	5.00	26		130.00	260.00	Budget proposed for Rs 130.00 lakhs @ Rs.5.00 Lakhs per Health Facilities for Climate Resilient Health Facilities 26 Nos CHCs in 2022-23 and 52 Nos PHCs in 2023-24	Process for Online Tendaring portal (GEM)
Capacity building incl. training				**42.97**	**42.97**		
Trainings of Medical Officers, Health Workers and Programme officers under NPCCHH	1.00	26		26.00	26.00	District Level Workshop with district administrators, All District level Officers of line departments and Health Officers (All the District Health Programme Officers and other senior officers relevant in the domain of Climate change) in 26 Nos district for 5 Days	Proposed plan for conducted training for the month of September/ October'2022 regarding the Action Plan on Climate Change and Human Healt under heat-related illnesses, air pollution related diseases, and environmentally friendly (green) and

Particulars	Unit Cost (Rs. Lakhs)	Quantity/Target	Budget Approved (Rs. Lakhs) Year 1	Year 2	Year 3	Remarks	State Plan
							resilient infrastructure are three important climate sensitive health issues out of 17 climate sensitive diseases and issues identified for action in the programme
Training at State Level	8.48	2		16.97	16.97	State Level ToT of District Medical Officer and District Programme Officer relevant in the domain of Climate change for 5 days	Plan for conducted ToT of all DMO, Nodal Officer climate change for Dist. For the month of September' 2022
IEC & Printing				**41.00**	**41.00**		
IEC on Climate Sensitive Diseases at Block, District and State level – Air pollution, Heat and other relevant Climate Sensitive diseases	36.00	1		36.00	36.00	Rs. 10.00 Lakh for the State level awareness campaign on CC & HH through Print and Digital media at State Level. 26 Nos District level awareness campaign on CC & HH through Print and Digital media at districts @ Rs.1.00 Lakh per District	Prepared plan for printing of posters (Leaflet/Pamplet), audio visual in local media, awareness camping in local News paper, video, organising public health events, issuing advisories related to climate change and human health
Printing activities for NPCCHH	5 .00	1		5.00	5.00	Reprinting of Guideline and formats for NPCCHH	File have already been process for printing of Manual, Guideline and Reporting Format from State level
Others including operating costs (OOC)				**23.00**	**27.00**		
Energy Audit	0.40	5		2.00	4.00	Budget Proposed for Energy Audit @Rs.0.40 Lakhs per DH 5 Nos for 2022-23 and 10 Nos for 2023-24	Proposed plan for Energy Audit for 5 Dist. Hospital for the F/Y 22-23 is as: 1. BPGH, East Siang (Pasighat) 2. Dist. Hospital-Lower Subansiri 3. DH-West Kameng (Bomdila)

Particulars	Unit Cost (Rs. Lakhs)	Quantity/Target	Budget Approved (Rs. Lakhs) Year 1	Year 2	Year 3	Remarks	State Plan
							4. DH-Lohit ((Tezu) 5. DH-DH-Tirap for the month of Octo' 22 F/Y 23-24
LED Lighting	1.00	3		3.00	5.00	Budget Proposed for converting Health Facilities in the Districts into Energy Efficient units @ Rs.1.00 Lakhs per District 3 Nos for 2022-23 and 5 Nos for 2023-24	Plan for replacement of existing (non-LED) lighting with LED in District Hospital and other Healthcare Facilities at District level to covered energy Efficiency Measures to reduce carbon emissions, minimize maintenance costs,improve quality of lighting for the month of Sept' 22. 1st face plan for 3 Dist F/Y 22-23 (East Siang,West Kameng & Lohit) and 2nd face plan for 5 Dist. F/Y 23-24 (Tawang, Changlang, Namsai, Dibang Valley & Lower Subansiri)
Solar Panel	2.50	4		10.00	10.00	Budget Proposed for installing Solar Panel in DHs @Rs.2.50 Lakhs per DH 4 Nos for 2022-23 and 4 Nos for 2023-24	1. Plan for instalation Solar Panal for 22-23 at DH-East Siang, DH-West Kameng, DH-Tezu and DH-Lower Subansiri 2. Plan for instalation Solar Panal for 23-24 at DH-Changlang, DH-Namsai, DH-Dibang Valley & GH-Tirap

Particulars	Unit Cost (Rs. Lakhs)	Quantity/Target	Budget Approved (Rs. Lakhs) Year 1	Year 2	Year 3	Remarks	State Plan
Rain water Harvesting System	2.00	4		8.00	8.00	Budget Proposed for installing Rain water Harvesting System in DHs @Rs.2.50 Lakhs per DH in the above units where sonal panel will be install	1. Plan for installation Rain Water Harvesting Syatem for 22-23 at DH-East Siang, DH-West Kameng, DH- Tezu and DH-Lower Subansiri 2. Plan for instalation Rain Water Hervesting Syatem for 23-24 at DH-Changlang, DH-Namsai, DH-Dibang Valley & GH-Tirap
Planning & M&E				**15.80**	**15.80**		
Operational Cost	5.00	1		5.00	5.00	Operational Cost (Expenses on account of consumables, operating expenses, office expenses, admin expenses, contingencies, transport of samples, miscellaneous etc.)	
Task force Meeting to draft health sector plan for Heat and Air Pollution	3.00	1		3.00	3.00	Two (2) Task force meeting will be conducted with invited of DMO, DSO, DPO, DDMA from health sector and non-health sectors (Dept. of Agriculture, Dept. of Water & Sanitation, Depta of Animal Husbandry, PWD, Dept of Power and Dept. of Education) to develop health sector plan climate change & Human Health	Plan for conducted Task force Meeting at State Level for the month of September'2022

Particulars	Unit Cost (Rs. Lakhs)	Quantity/Target	Budget Approved (Rs. Lakhs)			Remarks	State Plan
			Year 1	Year 2	Year 3		
Sensitization workshop/ Meeting of the District level Health Officers at District Level	0.30	26		7.80	7.80	One Day Workshop/ Meeting of Medical Officer and Nursing Officer and One Day meeting/Workshop for Community Level health Worker at the District Level in the 26 Districts	1. Plan for conducted One Day Workshop/ Meeting of Medical Officer and Nursing Office for all District at State Level for the month of September' 22 2. Plan for conducted One Day meeting/ Workshop for Community Level health Worker at the District Level in the 26 Districts for the month of Last week of Sept' 22/1st Week of October'22
Surveillance, Research, Review, Evaluation (SRRE)				**27.00**	**27.00**		
Surveillance/ Research related to Climate Change, Air Pollution and Heat related illness	1.00	27		27.00	27.00	Budget proposed for Surveillance/ Research related to Climate Change, Air Pollution and Heat related illness @ Rs.1.00 Lakh per District & State HQ	Process for fund release at District Level
Total Budget Proposal				**291.17**	**425.17**		

Note: Year 1 = FY 2022-23; Year 2 = FY 2023-24; Year 3 = FY 2024-25.

FY 2024-29

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/ Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/ Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
NCD.7	**113**	**Infrastructure -Civil Works (I&C)**		**240.00**		**240.00**	**-**	**-**	**-**	**-**	
		Old/ ongoing work									
		New Work- Climate Resilient Health facilities	5.00	240.00	5.00	240.00	-	-	-	-	Budget proposed for Rs.240.00 lakhs @Rs.5.00 Lakhs per Health Facilities for Climate Resilient Health facilities for @14 Nos CHCs and @34 Nos PHCs in 2024-25 and 2025-26
NCD.7	**113**	**Capacity building incl. training**		**57.00**		**70.00**		**72.00**		**72.00**	
		Trainings of Medical Officers, Health Workers and Programme officers under NPCCHH	1.50	39.00	2.00	52.00	2.00	52.00	2.00	52.00	District Level Workshop with district administrators, All District level Officers of line departments and Health Officers (All the District Health Programme Officers and other senior officers relevant in the domain of Climate change) in 26 Nos district for 5 Days
		Training at State Level	9.00	18.00	9.00	18.00	10.00	20.00	10.00	20.00	State Level ToT of District Medical Officer and District Programme Officer relevant in the domain of Climate change for 5 days
NCD.7	**113**	**IEC & Printing**	**1.50**	**55.00**	**2.00**	**69.00**	**2.00**	**70.00**	**2.00**	**71.00**	

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/ Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/ Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
	IEC	IEC on Climate Sensitive Diseases at Block , District and State level – Air pollution, Heat and other relevant Climate Sensitive diseases	1.5	50.00	2	63.00	2	63.00	2	63.00	1. Rs.10.00 Lakh for the State level awareness campaign on CC & HH through Print and 2. Digital media at 26 Nos District level awareness campaign on CC & HH through Print and Digital media at districts @Rs.1.00 Lakh per District
	Printing	Printing activities for NPCCHH		5.00		6.00		7.00		8.00	Reprinting of Guideline and formats for NPCCHH
NCD. 7	**113**	**Others including operating costs(OOC)**		**35.50**		**35.00**		**43.00**	**6.10**	**45.6**	
		Energy Audit	0.50	2.50	0.40	2.00	0.50	13.00	0.60	15.60	Budget Proposed for Energy Audit @Rs.0.40 Lakhs per DH 5 Nos for 2022-23 and 10 Nos for 2023-24.
		LED Lighting	1.00	6.00	1.00	6.00	1.00	5.00	1.00	5.00	Budget Proposed for converting Health Facilities in the Districts into Energy Efficient units @Rs.1.00 Lakhs per District @6 Nos each for 2024-25 to 2027-28
		Solar Panel	2.50	15.00	2.50	15.00	2.50	15.00	2.50	15.00	Budget Proposed for installing Solar Panel in DHs @Rs.2.50 Lakhs per DH 4 Nos for 2022-23 and 4 Nos for 2023-24.
		Rain water Harvesting System	2.00	12.00	2.00	12.00	2.00	10.00	2.00	10.00	Budget Proposed for installing Rain water Harvesting System in DHs @Rs.2.50 Lakhs per DH in the above units where sonal panel will be install @ 6 No. DH for 24-25/25-26 & 5 No. for 26-27 F/Y
NCD. 7	**113**	**Planning & M&E**		**21.00**		**22.5**		**27.70**		**36.00**	

New FMR	Sl. No.	Particulars	Budget Proposed								Remarks
			Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 1	Unit Cost (Rs. Lakhs)/ Qnty.	(Rs. Lakhs) Year 2	Unit Cost (Rs. Lakhs)/ Qnty.	(Rs. Lakhs) Year 3	Unit Cost (Rs. Lakhs)/Qnty.	(Rs. Lakhs) Year 4	
		Operational Cost	5.00	5.00	6.00	6.00	6.00	6.00	6.00	6.00	Operational Cost (Expenses on account of consumables, operating expenses, office expenses, admin expenses, contingencies, transport of samples, miscellaneous etc.)
		Task force Meeting to draft health sector plan for Heat and Air Pollution	3.00	3.00	3.50	3.50	3.50	3.50	4.00	4.00	Two Task force meeting with invited experts from health and non-health sectors to develop health sector plan climate change & Human Health
		Sensitization workshop/ Meeting of the District level Health Officers at District Level	0.50	13.00	0.50	13.00	0.70	18.20	1.00	26.00	One Day Workshop/ Meeting of Medical Officer and Nursing Officer and One Day meeting/Workshop for Community Level health Worker at the District Level in the 26 Districts
NCD. 7	113	Surveillance, Research, Review, Evaluation (SRRE)		26.00		31.20		52.00		52.00	
		Surveillance/ Research related to Climate Change, Air Pollution and Heat related illness	1.00	26.00	1.20	31.20	2.00	52.00	2.00	52.00	Budget proposed for Surveillance/ Research related to Climate Change, Air Pollution and Heat related illness @Rs.1.00 Lakh per District & State HQ
		Total Budget Proposal		**434.50**	**2.00**	**467.70**	**2.00**	**264.70**	**8.10**	**276.60**	

Note: Year 1 = FY 2024-25; Year 2 = FY 2025-26; Year 3 = FY 2026-27; Year 4 = FY 2027-28.

Annexures

Annexure 1: List of District Nodal Officers - NPCCHH

Sl. No.	Name of District	Name of DNO Posted	Phone No. of DNO Posted	Email Address
1	Tawang	Dr. Sangey Thinley	8794031205	idsptawang@gmail.com
2	West Kameng	Dr. S. K. Thongen	9862356501	idspbomdila@yahoo.co.in
3	East Kameng	Dr. Kobi Gyadi	8132974907	Idsp.seppa@gmail.com
4	Papum Pare	Dr. R. R. Ronya	9436059242	arppm.idsp@nic.in
5	Lower Subansiri	Dr. Subu Habung	8730991612	Idspziro10@gmial.com
6	Upper Subansiri	Dr. Tape Dakpe	9402602363	arups.idsp@nic.in
7	Kurung Kumey	Dr. Boni Tuluk	8794016442	idspkurungkumey@gmail.com
8	Kra Daadi	Dr. Gimi Tang	8119080343	idspkradaadi@gmail.com
9	East Siang	Dr. Tarik Talom	9436057683	dsupasighat@gmail.com
10	Siang	Dr. T. Taki	6436248718	siangdsu@gmail.com
11	West Siang	Dr. Jombom Kato	8794124764	dsuwsiang2015@gmail.com
12	Upper Siang	Dr. India Modi	7630061285	dsuykg@yahoo.com
13	Lower Dibang Valley	Dr. L. C. Deori	8837303765	roingidsp2020@gmail.com
14	Dibang Valley	Dr. Hangkam Tangjang	9383079747	dmoanini@gmail.com
15	Namsai	Dr. C. M. Thamogung	9436835688	Idspnms2016@gmail.com
16	Lohit	Dr. S. Lowang	8259078550	idsptezu@rediffmail.com
17	Anjaw	Dr. S. Tayang	8119979003	Idsp_anjaw@yahoo.com
18	Changlang	Dr. R. C. Das	9774216389	idspchanglang@rediffmail.com
19	Tirap	Dr. P. Rakshit	9436046069	artrp.idsp@nic.in
20	Longding	Dr. Kato Ratan	7085610120	Idsp.longdin@gmail.com
21	Lower Siang	Dr. Gobuk Doke	8403994179	kinggobuk@gmail.com
22	Shi Yomi	Dr. Geyom Potom	9402925523	geyomm@gmail.com
23	Pakke Kessang	Dr. Podung Kamku	9402462818	dsupk24@gmail.com
24	Lepa Rada	Dr. Dagyi Basar	9436221921	dagyib@gmail.com
25	Kamle	Dr. Kapu Sopin	9436837150	sopinkapu@gmail.com
26	ICC	Dr. Giri Tali	9436270480	dsuicc21@gmail.com

Annexure 2: List of Health facility Nodal officers:

After notification, some of the districts are still in the process of nominating the officers and is expected to be completed before 20th August 2022

Sl. No.	District	Name	Contact No.	Email Id
1	**Anjaw**	**Under Process**		
2	Papum Pare	Dr. Lobsang Chuki	6909901269	chukitanalobsang@gmail.com
3	Capital Complex	Dr. Tamar Paleng	9436839799	tamarpaleng@yahoo.com
4	Changlang	Dr. Hage Asha	8974952879	hageami7@gmail.com
5	Dibang Valley	Dr. Rita Mena	6033972040	rritamena@gmail.com
6	East Siang	Dr. David Panggan	7005614486	
7	East Kameng	Dr. Deepa Yudik	9867420443	deepayudik.taba@gmail.com
8	**Kamle**	**Under process**		
9	Kra-Daadi	Dr. Khoda Doi	9436898719 6909973881	khodadoi@gmail.com
10	Kurung Kumey	Dr. Bengia Tani	9899278166	bengiatani@gmail.com
11	**Leparada**	**Under process**		
12	Lohit	Dr. A. Kri	8729949947	drakri18@gmail.com
13	Longding	Dr. Tangseng Techi	8119874431	techitangseng@gmail.com
14	Lower Dibang Valley	Dr. Johny Tamuk	9862322493	johnytamuk@gmail.com
15	**Lower Siang**	**Under process**		
16	Lower Subansiri	Dr. Kime Horming	9436228396	drhorming@yahoo.com
17	Namsai	Dr. Mingkeng Bomnam Gao	8168721582	mibomgao@gmail.com
18	Pakke Kessang	Dr. Lakshmi Yongfo	6900289538	lakshmiyangfo77@gmail.com
19	Shi Yomi	Dr. Inu Ete	9402021622	ilianzhuang@gmail.com
20	Siang	Dr. Hempi Jini	8119873834 9366993598	hempi.jini8@gmail.com
21	Tawang	Dr. Tsering Penjor	9402065033	idsptawang@gmail.com
22	**Tirap**	**Under process**		
23	**Upper Siang**	**Under process**		
24	Upper Subansiri	Dr. Tonya Bam	8119990107	dr.tonyabam06@gmail.com
25	West Kameng	Dr. Phari Dajangju	9402254225	pdajangju@gmail.com
26	West Siang	Dr. Tsering Wangmo Kato	8414813682	doctsering81@gmail.com

Annexure 3: Notification of State Governing Body, State Task Force and State Environment Cell

GOVERNMENT OF ARUNACHAL PRADESH
DEPARTMENT OF HEALTH & FAMILY WELFARE
ITANAGAR

NOTIFICATION

NO.IDSP/EHC-2019/1 Dated, Itanagar the Sept,2019

In terms of the Memorandum of Association, Rules, Regulations and Bye laws of the Arunachal Pradesh State Health Society(National Health Mission), and consequent to the adoption of the State Policy on Climate Change and Human Health by the National Health Mission, the Governing body of the National Health Mission will act as the Governing Body for Climate Change and Human Health.

Sd/-(Dr.Ashish Ch. Verma)IAS
Principal Secretary(Health & FW)
Government of Arunachal Pradesh
Itanagar

Memo.No.IDSP/EHC-2019/1 Dated, Itanagar the Sept,2019

Copy for information to :

1. The Secretary to Hon'ble Governor of Arunachal Pradesh.
2. The PPS to Hon'ble Chief Minister, Arunachal Pradesh.
3. The PPS to Deputy Chief Minister, Arunachal Pradesh.
4. The PS to Hon'ble Health Minister, Arunachal Pradesh.
5. The PS to the Chief Secretary, Govt. of Arunachal Pradesh.
6. The Principal Secretary(Health & FW), Arunachal Pradesh
7. The Commissioner, Finance, Govt. of Arunachal Pradesh.
8. The Mission Director, National Health Mission, Govt. of Arunachal Pradesh.
9. All Deputy Commissioners, Arunachal Pradesh.
10. The DHS/DFW/DME/Director-TRIHMS, Arunachal Pradesh, Naharlagun
11. All District Medical Officers, Arunachal Pradesh
12. All members of the GB notified for NHM.
13. Guard File
14. Office copy.

(Lod Hinda)
Under Secretary(Health & FW)
Government of Arunachal Pradesh
Itanagar

GOVERNMENT OF ARUNACHAL PRADESH
DEPARTMENT OF HEALTH & FAMILY WELFARE
ITANAGAR

NOTIFICATION

NO.IDSP/EHC-2019/1 Dated, Itanagar the Sept,2019

A State Task Force on Climate Change and Human Health consisting of the following officers is hereby constituted to mitigate the consequences of climate change and its impact on human health.

Chairperson: Secretary(Health & FW)
Member Secretary: State Nodal Officer(Climate Change)
Members:

1. Mission Director(NHM).
2. Chairman, State Pollution Control Board.
3. Chairman, State Disaster Management Authority.
4. Principal Chief Conservator of Forest
5. Chief Engineer, PHED
6. Director of Meteorology department.
7. Director of Agriculture.
8. Director of Health Services
9. Director, Family Welfare
10. Director, Medical Education
11. Director, TRIHMS
12. Jt.Director of Health Services(P&D)
13. State Nodal Officer(NCD)
14. State Programme Officer(NVBDCP)
15. State Surveillance Officer(IDSP)
16. Nodal Officer(NHM)
17. Nodal Officer(IEC), NHM
18. Nodal Officer (Training)-NHM

The State Task Force will strive for strengthening of health of citizens of the state againstclimate sensitive illnesses and for strengthening of existing national healthprogrammesfrom climate sensitive perspective.

Sd/-(Dr.Ashish Ch. Verma)IAS
Principal Secretary(Health & FW)
Government of Arunachal Pradesh
Itanagar

Memo.No.IDSP/EHC-2019/1 Dated, Itanagar the Sept,2019

Copy for information to :

1. The Secretary to Hon'ble Governor of Arunachal Pradesh.
2. The PPS to Hon'ble Chief Minister, Arunachal Pradesh.
3. The PPS to Deputy Chief Minister, Arunachal Pradesh.
4. The PS to Hon'ble Health Minister, Arunachal Pradesh.
5. The PS to the Chief Secretary, Govt. of Arunachal Pradesh.
6. ThePrincipal Secretary(Health & FW), Arunachal Pradesh
7. The Commissioner, Finance, Govt. of Arunachal Pradesh.
8. The Mission Director, National Health Mission, Govt. of Arunachal Pradesh.
9. All Deputy Commissioners, Arunachal Pradesh.
10. The DHS/DFW/DME/Director-TRIHMS, Arunachal Pradesh, Naharlagun
11. All District Medical Officers, Arunachal Pradesh
12. All members as listed above
13. Guard File
14. Office copy.

11/12/19

(Lod Hinda)
Under Secretary(Health & FW)
Government of Arunachal Pradesh
Itanagar

GOVERNMENT OF ARUNACHAL PRADESH
DEPARTMENT OF HEALTH & FAMILY WELFARE
ITANAGAR

ORDER

NO.IDSP/EHC-2019/1 Dated, Itanagar the Sept,2019

The Governor of Arunachal Pradesh is pleased to notify the constitution of a State Environment Cell (SEC) at the Directorate of Health Services, Naharlagun under theDepartment of Health & FW, Government of Arunachal Pradesh for initiating appropriate interventions to reduce morbidity and mortality resulting due to effects of Climate changes and other environmental factorsand to mitigate the consequences of climate change on human health.

Dr.Lobsang Jampa, State Surveillance Officer(IDSP) is further notified as State Nodal Officer (Climate Change) under the Prime Minister National Programme for Climate Change and Human Health.

Sd/-(Dr.Ashish Ch. Verma)IAS
Principal Secretary(Health & FW)
Government of Arunachal Pradesh
Itanagar

Memo.No.IDSP/EHC-2019/1 Dated, Itanagar the Sept,2019

Copy for information to :

1. The Secretary to Hon'ble Governor of Arunachal Pradesh.
2. The PPS to Hon'ble Chief Minister, Arunachal Pradesh.
3. The PPS to Deputy Chief Minister, Arunachal Pradesh.
4. The PS to Hon'ble Health Minister, Arunachal Pradesh.
5. The PS to the Chief Secretary, Govt. of Arunachal Pradesh.
6. The Commissioner, Finance, Govt. of Arunachal Pradesh.
7. The Mission Director, National Health Mission, Govt. of Arunachal Pradesh.
8. All Deputy Commissioners, Arunachal Pradesh.
9. The DHS/DFW/DME/Director-TRIHMS, Arunachal Pradesh, Naharlagun
10. All District Medical Officers, Arunachal Pradesh
11. Guard File
12. Office copy.

11/12/19

(Lod Hinda)
Under Secretary (Health & FW)
Government of Arunachal Pradesh
Itanagar

File No.NPCCHH/2021/3

GOVERNMENT OF ARUNACHAL PRADESH
DEPARTMENT OF HEALTH & FAMILY WELFARE
ITANAGAR

NOTIFICATION

File No.NPCCHH/2021/3 Dated, Itanagar the Dec, 2021

To steer, monitor and implement the goals and objectives of the National Programme on Climate Change and Human Health and the vision of the State Government as envisaged by the 'Pakke 2047 Declaration on Climate Change' at the district level, a District Level Multi-Sectoral Task Force on Climate Change and Human Health and District Environmental Health Cell consisting of the following officers is hereby constituted to mitigate the consequences of Climate Change and its impact on Human Health.

District Level Task Force- Environmental Health:

Deputy Commissioner	Chairman
District Medical Officer	Vice Chairman
District Surveillance Officer/ District Nodal Officer – Climate Change.	*Member Secretary*
District Programme Manager - NHM	Member
District Head, Department of Disaster Management Authority	Member
District Head, Department of Agriculture	Member
District Head, Department of PHED	Member
District Head, Department of Transport	Member
District Head, Department of Animal Husbandry	Member
District Head, Department of Environment and Forests	Member
District Head, Department of Women and Child Development / Social Justice	Member
District Head, Department of Science and Technology/ Earth Sciences	Member
District Head, Department of Education	Member
District Head, Department of Pollution Control Board	Member
District Head, Department of Human Resource Development	Member
District Head, Department of Public Works Department	Member
District Head, Department of Power	Member

File No.NPCCHH/2021/3

District Head, Department of Finance	Member
District Head, Department of Law	Member
District Head, Department of Panchayati Raj	Member

And The District Environment Health Cell comprising of:

District Surveillance Officer/ District Nodal Officer- Climate Change	Chairman
District Veterinary officer	Member
District RCH officer	Member
District Epidemiologist	Member
District Microbiologist	Member
District Immunisation Officer	Member
District Training Officer	Member
Data entry operator	Supporting staff

The District Level Task Force will strive for strengthening the health of the citizens of the district against climate sensitive illnesses and for strengthening and implementation of existing national health programmes from climate sensitive perspective.

Sd/-(Dr. Sharat Chauhan) IAS
Principal Secretary (Health & FW)
Government of Arunachal Pradesh
Itanagar

Memo No.NPCCHH/2021/3 Dated, Itanagar the Dec, 2021

Copy for information& necessary action to:

1. The Secretary to Hon'ble Governor of Arunachal Pradesh.
2. The PPS to Hon'ble Chief Minister, Arunachal Pradesh.
3. The PPS to Deputy Chief Minister, Arunachal Pradesh
4. The PS to Hon'ble Health Minister, Arunachal Pradesh
5. The PS to Chief Secretary, Govt. of Arunachal Pradesh
6. The SPA to Principal Secretary (H&FW), Govt. of Arunachal Pradesh, Itanagar

7. The SPA to Secretary (Health &FW), Govt. of Arunachal Pradesh, Itanagar,
8. The Mission Director (NHM), Govt. of Arunachal Pradesh, Naharlagun,
9. All Deputy Commissioners, Arunachal Pradesh
10. The Director of Health Services, Govt. of Arunachal Pradesh, Naharlagun,
11. The Nodal Officer (NHM), Govt. of Arunachal Pradesh, Naharlagun
12. The SSO (IDSP) cum SNO(NPCCHH) , Govt. of Arunachal Pradesh, Naharlagun,
13. The DMO, All Districts,
14. The HoD's and members as listed above
15. The District Nodal Officer-Climate Change and Human Health
16. Office Copy.

Signed by Songnyan Tante
Date: 04-01-2022 09:18:30
Reason: Approved

(Songnyan Tante)
Under Secretary (Health &FW)
Govt. of Arunachal Pradesh
Itanagar

Annexure 4: IEC Materials