

7.6. Human Health

Human health is of paramount importance in the overall wellbeing and productivity of a state. Goa has 13 government hospitals with 3000 beds and 29 community/primary health centres and 30 dispensaries. It has about 2756 beds in private hospital²².

Developing countries face substantial vulnerabilities to climate change's current and projected health risks. The health-related risks depend not only on climatic factors but also the population's exposure to those risks.

The health statistics in the state indicate a rise in several vector-borne diseases in the last 5 years.

Table 29: Vector Borne Diseases in Goa from 2014 to 2019

Year	Malaria Indigenous cases		Malaria Imported cases	J.E	Dengue	Chikungunya	Filariasis
	PF	Total					
2014	42	824	4624	Nil	168	49	Nil
2015	75	651	3802	1	293	32	Nil
2016	130	742	4060	1	150	49	Nil
2017	75	653	3427	Nil	235	48	Nil
2018	50	377	3485	3	335	77	Nil
2019 till Oct.	46	231	1731	1	467	245	Nil

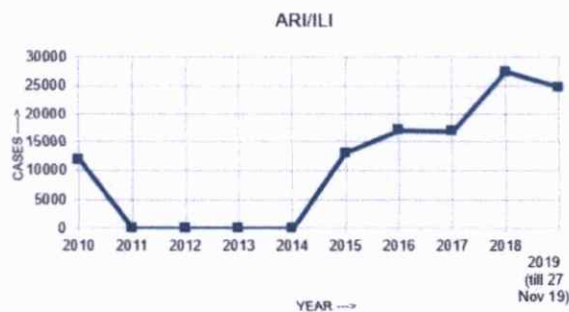
Table 30: Cases of other diseases

Year	Acute Diarrheal Disease	Acute Respiratory Infection/ Influenza Like Illness	Pneumonia
2009	14862	54779	690
2010	11923	54052	763
2011	NA	NA	NA
2012	NA	NA	NA
2013	NA	NA	NA

²² Goa at a glance 2017-18

2014	NA	NA	NA
2015	13068	75752	890
2016	17072	74458	1156
2017	16932	73465	812
2018	27482	120878	2745
2019 (till 27 Nov 19)	24814	121035	2176

Kyasanur Forest Disease (KFD) is a tick-borne disease confined to Karnataka State for more than 50 years. In 2015, an outbreak of fever along with vomiting & diarrhoea was reported from Pali Village of Sattari Taluka. On investigation of this outbreak, it was confirmed to be KFD. This was the first incident of KFD in Goa. Since then, KFD has been reported every year from December to May. It cannot be confirmed whether the disease outbreak in Goa is due to climate change; however, it is predicted that such new diseases or an increase in cases of certain diseases may increase due to climate change.



Over and above the existing medical infrastructure, Goa launched Deen Dayal Swasthya Yojana in 2016. It is a universal insurance scheme providing insurance cover to the entire population. Also, under the Goa Mediclaim scheme, financial assistance is offered to every permanent resident of the State availing super specialty treatment that is not available in the Government Hospitals in the State of Goa. The Goa State Illness Assistance Society scheme provides financial assistance to INR 1.50 lakhs per patient below the poverty line for availing super specialty treatment not available in the State Government Hospitals²³.

²³ Goa economic survey 2017-18

Impact of climate change

The health of human populations is sensitive to shifts in weather patterns and other aspects of climate change. Increased variability in the weather pattern will further impact the ability of the human body to adjust. Based on the climate change projections, it is expected that:

1. The temperature in Goa may rise by 4-5 °C, and beyond a decade state may experience heatwave conditions, which are currently not experienced in the state. This can cause health effects like dehydration, heatstroke, etc. which are known to occur in other states during heatwave conditions.
2. Mortality and morbidity rates due to mudslides, flooding, and cyclonic events are also likely to rise.
3. Changing weather patterns is likely to increase the window for the occurrence of vector-borne disease.
4. It is predicted that climate change can disrupt the health services-related infrastructure and its capacity to serve due to severe events and a rise in the number of illnesses.
5. New diseases can be introduced in the state.

Alignment with National Mission and SDG

National action plan on health and climate change was launched in 2019 under the national health mission to address health issues related to climate change. Goa is already aligning itself to participate in the programme. In addition, Integrated Disease Surveillance Programme has been identified under Environment Health Cell for NPCCHH.

It is also aligned with SDG3 i.e., ensuring healthy lives and promoting well-being for all ages. Under this, the strategies are specifically focused towards target 3.3, i.e. By 2030, end the epidemics of AIDS, tuberculosis, malaria and neglected tropical diseases and combat hepatitis, water-borne diseases, and other communicable diseases.

Table 31 - Adaptation strategies for health

Sr. No.	Intervention	Status	Responsible agency	Barriers and Gap in implementation	Intervention Type	Funds ₹	Source of Finance	Timeframe	Monitoring Mechanism & Timeframe
1	Prepare an action plan to reduce the climate change related health impacts	Identification of such health impacts and preparation of plan is proposed	PHE Inhouse expertise	No barriers	Others	1 lakh	Own State budget	6 months	Internal monitoring within Dept.

2	Develop an IT enabled system to inform the public on possible and actual disease outbreak	Proposed	PHE	Support of external experts such as IT Dept. and media is required	Activity	25 lakh	Existing State Budget or Central Funds Sourcing / Provisioning Required	2 years	Internal monitoring within Dept. Six monthly reporting to Climate Change Cell / Secretariat
3	Study and map new and emerging diseases in the state in relation to climate change	Proposed	PHE	Support of external experts from GMC is required	Activity	10 lakh	State Budget	Continuous system but also research based intervention in 2 years for baseline map is proposed	Internal monitoring within Dept. Six monthly reporting to Climate Change Cell / Secretariat
4	Prepare a heat wave action plan	Proposed	PHE & Secretariat	Support of external experts from climate change domain is required	Others	5 lakh	State Budget	6 months	Internal monitoring within Dept. Six monthly reporting to Climate Change Cell / Secretariat
5	Develop a system to predict disease outbreak	Proposed	PHE	Support of external experts from GMC is required	Activity	2 lakh	State budget	6 months	Internal monitoring within Dept. & reporting to Climate Change Cell / Secretariat

6	Assess the adequacy and resilience of health infrastructure to climate change	Proposed	PHE	Support of external experts from GMC & PWD / GSIDC is required and also verification agency	Activity	10 lakh	State & Central NQAS (National Quality Assessment) budget	1 year	Internal monitoring within Dept. & reporting to Climate Change Cell / Secretariat
7	Strengthen the health infrastructure based on the assessment	Proposed	PHE	Support of external experts from GMC & PWD / GSIDC is required	Activity	6.47 crores	State & Central budget	10 years	Internal Monitoring within Dept. & reporting to Climate Change Cell / Secretariat
8	Enhancing the knowledge skills of health workers with respect to climate change	Proposed and ongoing to have consultant for conducting training and capacity building even to local bodies	PHE	Within the department	Activity	1 crore	State Govt. budget	6 months	Internal monitoring within Dept. & reporting to Climate Change Cell / Secretariat
9	Managing and dealing with pandemics - IEC and other aspects of management	Proposed and ongoing. Such funds are received during pandemics also	PHE with other departments	Cross sectoral headed by PHC	Activity	2 crores	State Govt. budget	During any pandemic	Internal monitoring and reporting to statutory bodies within Dept. & reporting to Climate Change Cell / Secretariat

10	Greater focus on climate resilient health infrastructure	Planned	Dept with other concerned departments	Cross sectoral headed by Dir. Health	Activity	To be provisioned after first SLSC for NAFCC and proposal to be included within 25 crores of NAFCC projects	State Govt and NAFCC	Process to be initiated within six months	Internal Monitoring within Dept. & reporting to Climate Change Cell / Secretariat
11	The Nodal Officer in State Health Department should be consulted to address water borne diseases and other health parameters	Planned	Dept. with Climate Change Secretariat	Cross sectoral headed by Dir. Health and Nodal officer climate change	Policy decision	To be ensured during first SLSC within two months	State Govt	To be ensured within two months	Internal monitoring within Dept. & reporting to Climate Change Cell / Secretariat

Note: Approximate financial implications of the health sector expected to be met from the climate change plan for ten years are approximately ₹ 10 crores.