

Impact of climate on Malaria

In continuation of earlier work in respect of Surat district, Banaskantha (Gujarat) and Bikaner (Rajasthan) districts were selected in consultation with NAMP for analysis of meteorological parameters and incidence of malaria from predictive value point of view. Month-wise time series analysis of data on temperature, rainfall, *P. vivax* and *P. falciparum* cases for a period of seven years (1985-91) including the period of outbreak of malaria were analysed. It was found that in Banaskantha district from 1987 (EL Nino year—drought year), *P. falciparum* cases were only 131. The cases started increasing from late 1987 and reached to a peak in 1990. The period between 1988 and 1990 was La Nina—colder with high rainfall and the cases in 1989 and 1990 were 20,310 and 23,201 respectively (Fig. 12). The findings illustrate that in EL Nino period malaria is lowest while in La Nina (when rainfall is high) malaria incidence reaches to peak. Further it was found that high rainfall at the threshold of transmission month in a particular year is also important resulting in increase of malaria cases. During the years 1988–1990 when cases started increasing, rainfall in the month of July was also experienced while from 1985–87 there were deficient rains till July. The findings suggest that EL Nino Southern Oscillation, rainfall, etc. may be used for prediction of malaria incidence.

Recently a study has been taken up by Malaria Research Centre on the “Impact of climate change on malaria in India” under National Communication Project of Ministry of Environment & Forests for studying vulnerability, assessment and adaptation measures in various sectors due to climatic change. Taking into account the present malaria situation in different paradigms in the country the study envisages to identify: (i) areas vulnerable to climate change in India; and (ii) the future scenario of

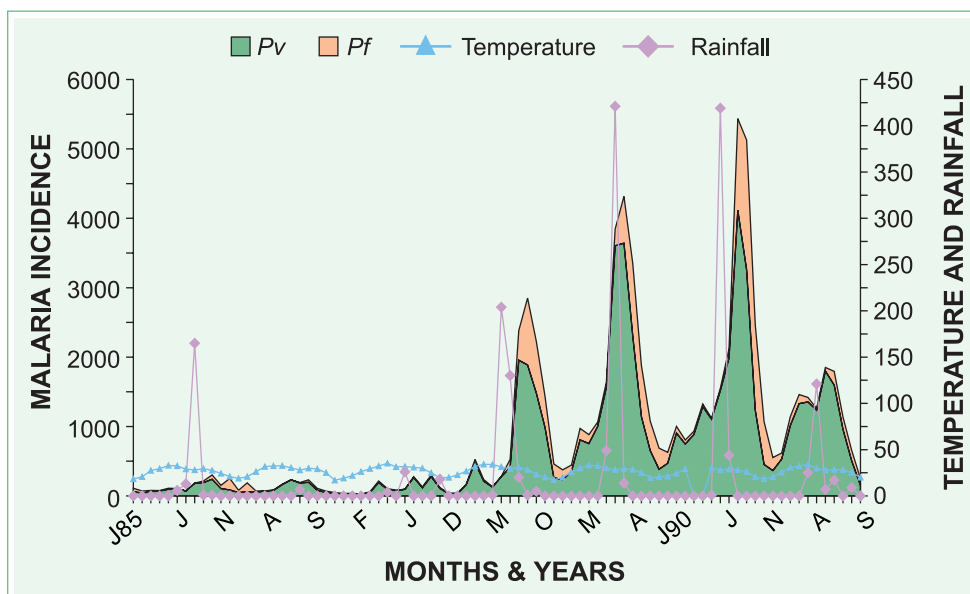


Fig. 12: Impact of meteorological data on the incidence of malaria in Banaskantha (Gujarat)

malaria with global warming in 2050 and 2100, wherein a projection of rise in temperature and precipitation to the tune of 1.4 to 5.8°C and 7% respectively has been made by Inter-Governmental Panel on Climate Change (IPCC, 2001). Based on

detailed analysis of relationship of malaria with meteorological parameters and socioeconomic conditions in few selected sites in Karnataka and Rajasthan, proactive adaptation measures would be suggested.

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