Climate Change Projections over India by a Downscaling Approach Using PRECIS

Climate change-induced sea-level rise (SLR) is one of the greatest challenges of the low-lying coastal regions of the world. Adaptation to the rising sea level is considered the most appropriate response measure to face this global challenge. However, this requires a pragmatic approach that's locally suitable. The first step would be projecting SLR locally under different scenarios and at different time slices. SLR projections for specific coastal regions, particularly for developing countries are seldom available and this study puts forth a research question as to what will be the SLR projections under different scenarios for the chosen study area, i.e. the Tamil Nadu and Puducherry coast of India. SimCLIM climate modeling software has been used to project SLR for the Tamil Nadu and Puducherry coast in India for four periods of time slice namely 2025, 2050, 2075 and 2100 for all four RCP scenarios viz., RCP 2.6, RCP 4.5, RCP 6.0 and RCP 8.5 of IPCC AR5. It has been estimated that the projected average medium range of SLR for the chosen study area may range from 7.12 cm to 36.98 cm for RCP 2.6; 7.39 cm to 50.01 cm for RCP 4.5; 7.18 cm to 51.91 cm for RCP 6.0; 7.40 cm to 78.15 cm for RCP 8.5 for the time slices from 2025 to 2100. It is expected that the numbers gleaned from this study will be of a potential source of information for coastal policy-planners and decision-makers to take the first step towards planning time bound SLR adaptation policies to conserve coastal resources particularly for the coast of Tamil Nadu and Puducherry.

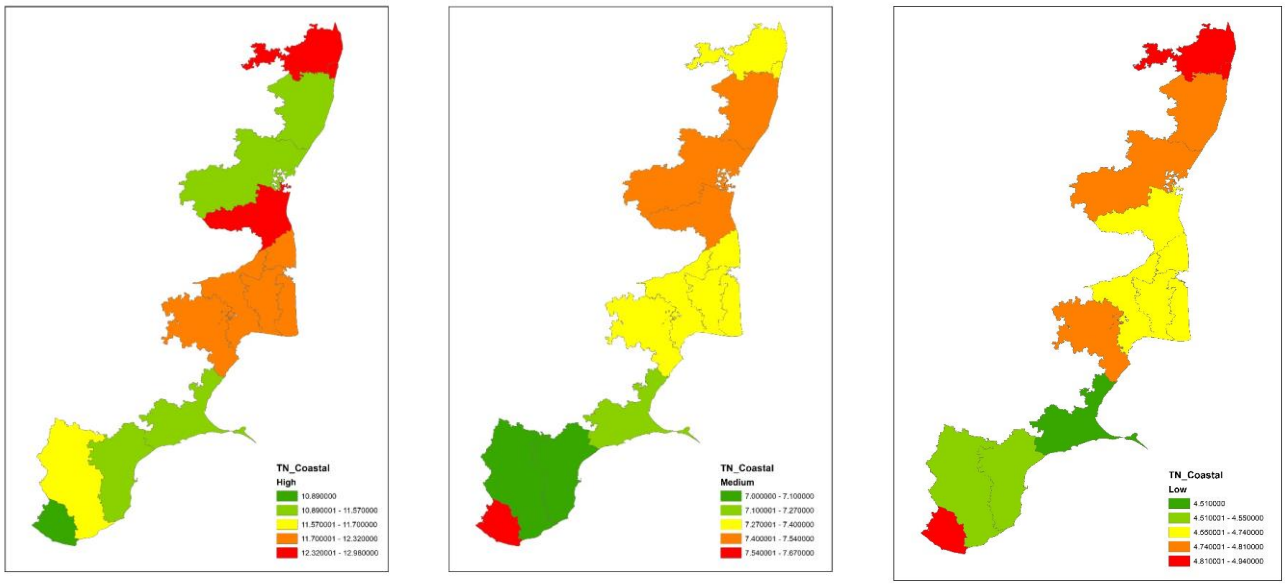

Figure 1 Projection of climate change-induced SLR for the coasts of Tamil Nadu and Puducherry, India using SimCLIM based on IPCC AR5-RCP 4.5

Source: A. Ramachandran, A. Saleem Khan, K. Palanivelu, R. Prasannavenkatesh, N. Jayanthi. **Projection of climate change-induced sea-level rise for the coasts of Tamil Nadu and Puducherry, India using SimCLIM: a first step towards planning adaptation policies.** *J Coast Conserv*, DOI 10.1007/s11852-017-0532-6

Figure 2 Projected Summer Monsoon Rainfall