Abiotic environmental factors are important in determining the distribution of disease-causing vectors and their life-cycles.

- Temperature
- Precipitation
- Relative humidity
- Solar radiation
- Topography
- Soil moisture
- Presence & extent of fresh water rivers, ponds, lakes

Biotic factors – ecosystem structure and health

Human factors- Land use, social-economic

HypsIRI observations can be merged through a Land Data Assimilation System (LDAS) to drive spatially-explicit ecological models of NTD vectors distribution & life cycles. Assimilations will be driven by observational data LDAS and satellite-derived meteorological forcing data, parameter datasets, and assimilation observations, including:

- Precipitation from TRMM, and GPM
- Land Cover Type from HyspIRI
- Soil Moisture from AMSR-E (where applicable), SMAP and HyspIRI.
- Terrestrial Water Storage from GRACE and GRACE II.
- Surface temperature, Vegetation Fraction/ Leaf Area Index, and canopy physiology from HyspIRI.
- Topography from SRTM.

HypsIRI hyperspectral measurements would provide global measurements of surface mineralogy and biotic crusts important in accessing the impact of dust in human health.

HypsIRI surface thermal measurements would also help identify the variability of dust sources due to surface moisture conditions and map mineralogy.

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