The equatorial eastern Indian Ocean plays a key role for the development of Indian Ocean Dipole (IOD) events and for regional circulation and rainfall changes in Indian Ocean-rim countries. Indian Ocean properties related to the development of IOD events are investigated in high-resolution ocean model (ORCA at 0.5° and 0.25° horizontal resolution) simulations using atmospheric forcing for the period 1958-2004. The interpretation of forcing mechanisms for eastern Indian Ocean variability is aided by the examination of sensitivity experiments, where atmospheric forcing variability (i.e., winds, heat fluxes) is restricted to the Indian or Pacific Ocean only. The relative importance of oceanic and atmospheric forcing factors for IOD events is assessed, as well as the role of local versus remote forcing (i.e., from the Pacific Ocean). Ocean-atmosphere coupling for different IOD events is explored. In the simulations, a distinct asymmetry during positive and negative IOD events is seen to exist in the relative importance of remote Pacific wind forcing for eastern Indian Ocean variability. Characteristics of the transmission of remote signals from the Pacific to the eastern Indian Ocean through the Indonesian Throughflow region are discussed.