The role of ecological linkage mechanisms in plasmodium knowlesi transmission and spread

ABSTRACT

Defining the linkages between landscape change, disease ecology and human health is essential to explain and predict the emergence of Plasmodium knowlesi malaria, a zoonotic parasite residing in Southeast Asian macaques, and transmitted by species of Anopheles mosquitos. Changing patterns of land use throughout Southeast Asia, particularly deforestation, are suggested to be the primary drivers behind the recent spread of this zoonotic parasite in humans. Local ecological changes at the landscape scale appear to be increasing the risk of disease in humans by altering the dynamics of transmission between the parasite and its primary hosts. This paper will focus on the emergence of P. knowlesi in humans in Malaysian Borneo and the ecological linkage mechanisms suggested to be playing an important role.