

Irrigate rice cultivation and malaria: the paddies paradox

Ephantus J. Muturi

Illinois natural History Survey, University of Illinois, Champaign IL. 61820.

The human population growth rate in Africa exceeds that of any other continent and ensuring food security for this population is a major challenge for many governments in this continent. Because a large fraction of arable land in Africa occurs in areas that are too dry for rain-fed agriculture, many countries have developed irrigation projects as a way of improving food security. Unfortunately, ecological changes associated with irrigated agriculture may increase the risk of vector borne diseases such as malaria by creating ideal habitats for mosquitoes. Although irrigated agriculture is associated with higher densities of malaria vectors, the risk of malaria transmission in irrigated agroecosystems may be higher, lower or equal to the neighboring non-irrigated areas. The term “paddies paradox” has been used to refer to the complex relationship between irrigated agriculture and the risk of malaria transmission. Using examples from a model irrigated agroecosystem in Kenya; I will attempt to address the various hypotheses responsible for the “paddies paradox”.