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Abstract: Environmental (i.e., ecological) disturbance frequently leads to emergence and re-emergence of infectious diseases. Some disturbances are natural (e.g., earth quakes, floods, droughts, volcanic eruptions, unusual patterns of weather, etc.), while others are anthropogenic in origin. A short list of human activities that have led to the spread of a few important infectious diseases are: dam building; traditional agricultural practices; urbanization; de-forestation; irrigation; political unrest and warfare). Many of these activities (particularly urbanization and agriculture) create ecotones (narrow zones between ecosystems) that favor a high degree of biodiversity among the plants and animals there compared to the adjacent ecosystems that help to form them. Within those small zones, numerous vectors thrive (e.g., mosquito, blackfly, kissing bug, and Tsetse fly in East Africa). Some diseases transmitted at the ecotone include: rabies, yellow fever, Lassa fever, Ebola, hantavirus, influenza, cholera, Lyme Disease, malaria, tuberculosis, plague, and schistosomiasis. Many of these infections occur predominantly in the tropics and employ either arthropod vectors or invertebrate intermediate hosts for their spread to human populations. Prevention requires an intimate knowledge of the ecology of specific pathogens and the biology of their vectors. Farming in many tropical settings requires dam building, de-forestation and irrigation. Nearly half of all African countries are currently engaged in civil unrest or open warfare. Recent changes in the annual global patterns of precipitation have favored the spread of plague, Hantavirus, the West Nile virus and cholera.

Q. What are some human activities not covered in this presentation that in your opinion may lead to new outbreaks of infections with agents yet to be described?