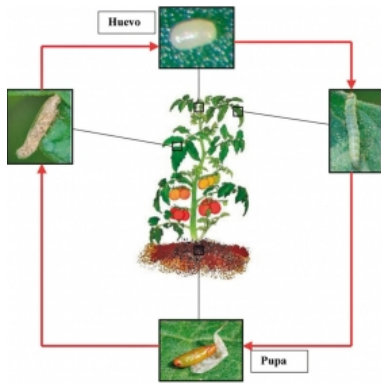


Biological subsystem



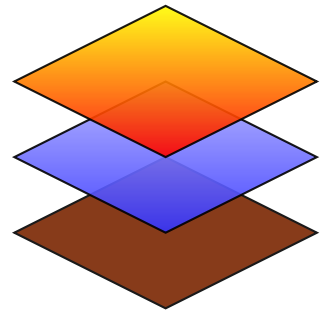
Life-cycle model

Temperature

Precipitation

Soil

etc.

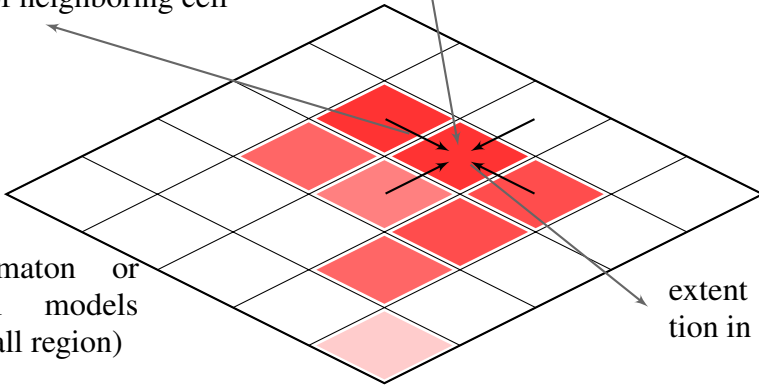


influence of neighboring cell

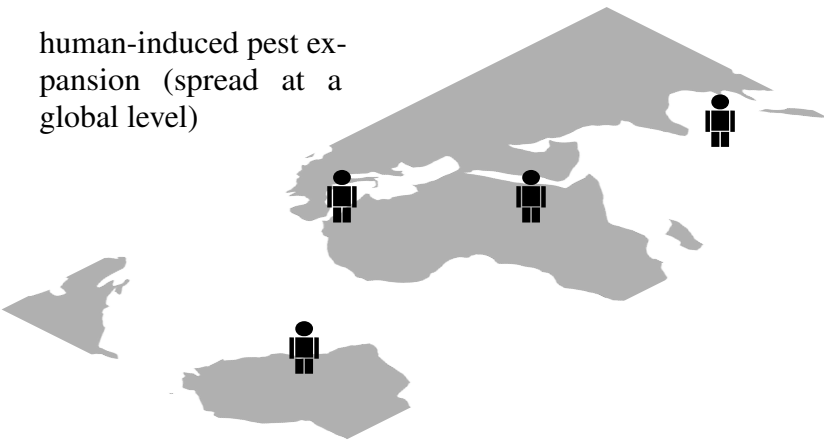
potential geographic distribution of the species

extent of infestation in a cell

Cellular automaton or spatio-temporal models (spread in a small region)



human-induced pest expansion (spread at a global level)



Socio-economic subsystem