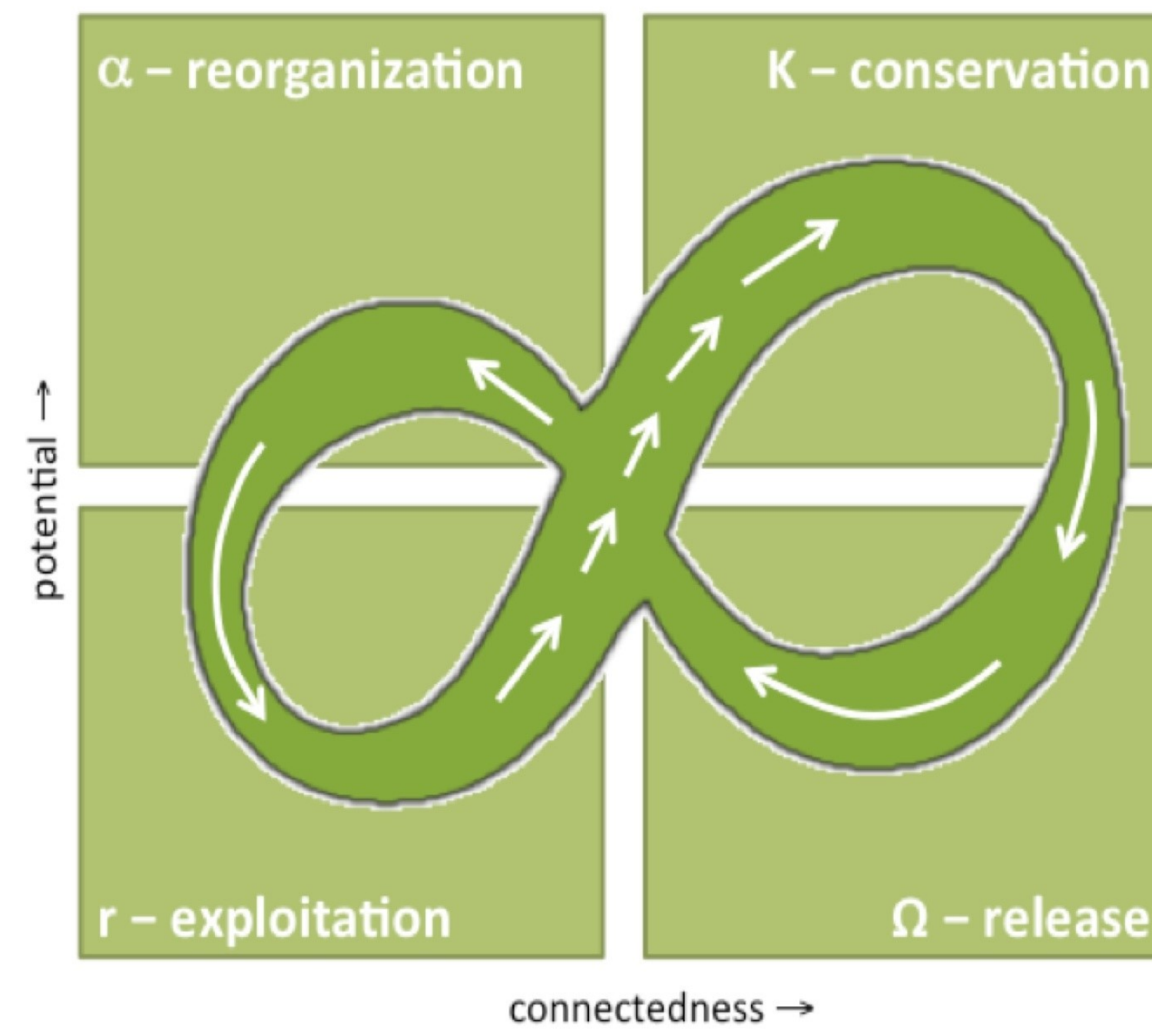


Spatial discontinuities and panarchy theory : for a better management of agriculture/forest interfaces

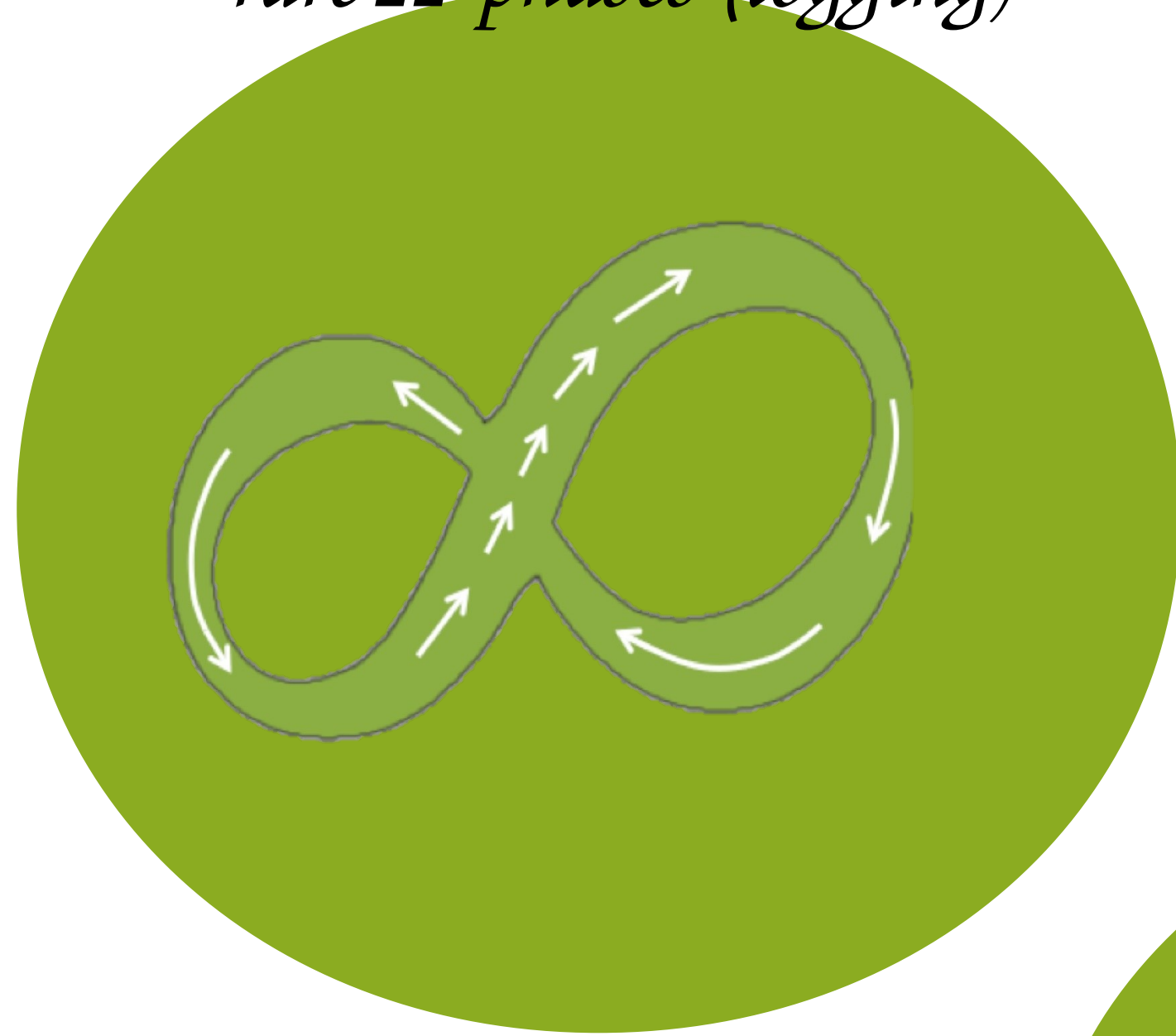
*System dynamics:
adaptive cycle*



*Forest: slow system
Long K phase,
rare Ω phases (logging)*

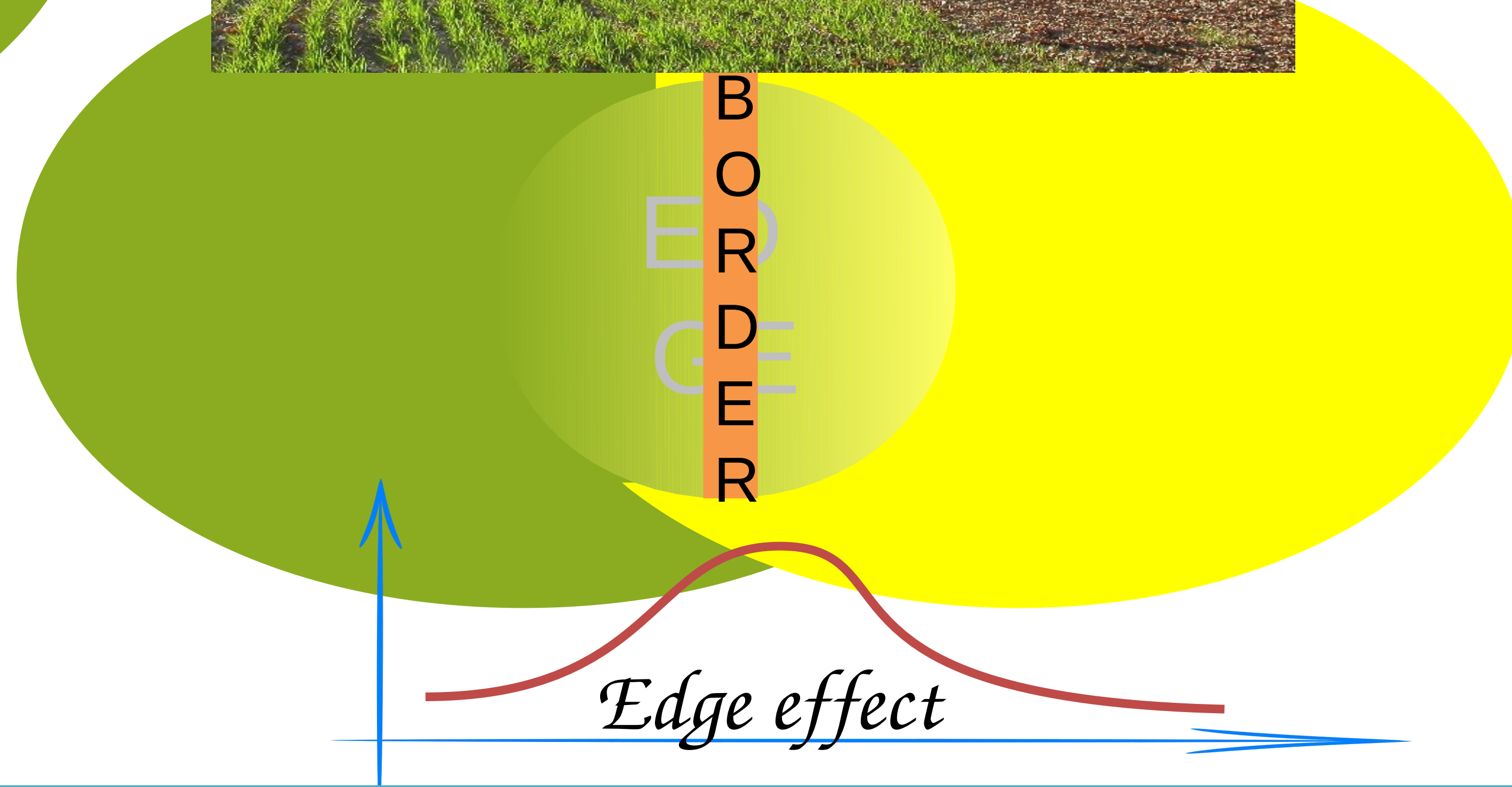


*Crop: fast system
Short K phase,
frequent Ω phases (harvesting)*



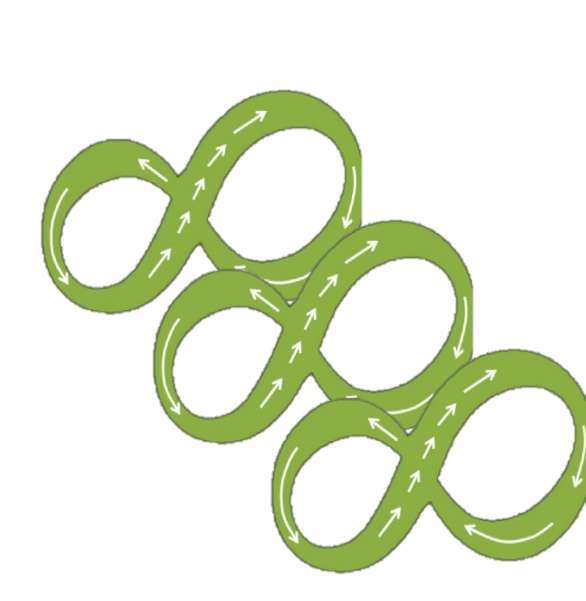
*Both habitats are influenced near
their shared border.*

Edge is the area of influence.



*Biodiversity, ecosystem services,
resource usages are modified by edge
effects.*

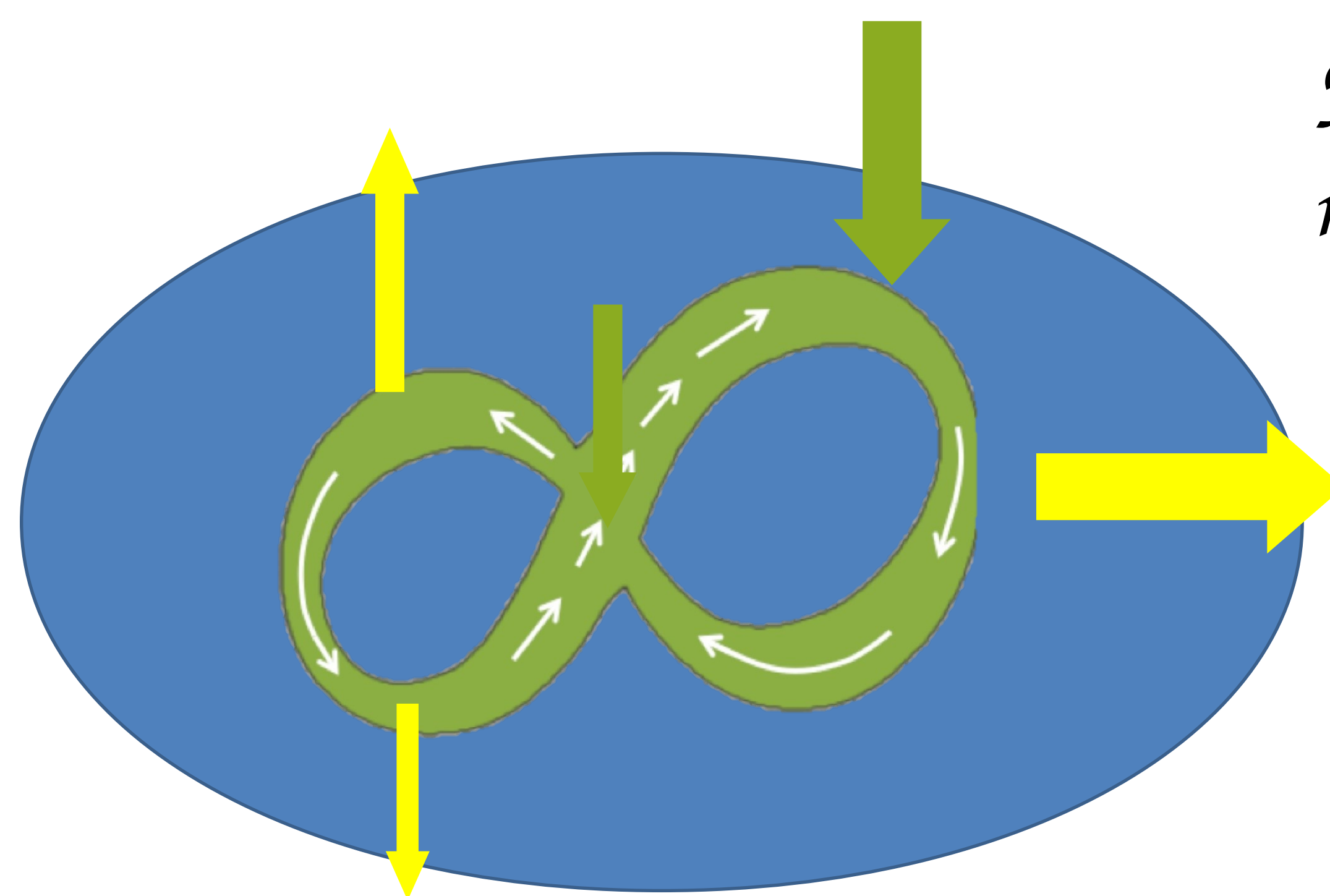
*Controlling edge effect is crucial for a
better land management*



How do the slow and the fast systems spatially interact ?

*During the K phase, the connectedness of the
system increases: it influences its outside.
During the other phases, the system is more
open and is influenced by its outside:*

- Strong influence may trigger Ω phase
- Lower influences contribute to α and r phases, providing novelty and resources



Spatial interface of the complex system

*Forest influences crop dynamics
most of the time (long K phase).*

*Crop may influence forest
dynamics during regeneration
phases (Ω , α , r)*