

## APPENDIX 2

### List of guiding questions for framework application

1. What is the emergent phenomenon that should be explained?
2. What social-ecological action situation or situations are at the core of the phenomenon, e.g. harvesting, cultivating, conserving, polluting, recreation, etc.? Which outcomes do they give rise to (e.g. catch, information, mortality, change in landscape structure).
3. For social-ecological AS: which actors (individuals, groups or collectives) and which ecological components constitute the social-ecological AS? Which roles do actors take in this interaction context, which actions can they take (e.g. harvesting, conserving), which ecological processes take place through the interaction (e.g. decrease in population size)? Through which structures are actors or ecological components connected, e.g. networks, spatial settings, etc.? What attributes of actors and non-human entities, such as preferences, motivations, skills or growth rates are important for explaining the emergent behavior of this AS?
4. Which drivers, structures or processes such as climate, regulations or food-web interactions or other social-ecological interactions enable or constrain the social-ecological action situation?
5. Are these external to the social-ecological system of interest, i.e. they cannot be influenced by actors or ecological processes within the SES, and can be represented as external drivers?
6. Or are they internal and directly influencing the social-ecological interactions and thus need to be represented as social or ecological AS? What are their emergent outcomes and how do they affect the social-ecological or other social or ecological AS?
7. For social AS: which actors (individuals, groups or collectives) participate in the social AS? How do actors relate to each other? Which roles do actors take in this interaction context, which actions can they take, which attributes of the actors are important for explaining the emergent behavior of this AS? How do the outcomes of social-ecological AS enable or constrain the social interaction? How are the social interactions in the social AS influenced by the social-ecological interactions?
8. For ecological AS: which ecosystem components (organisms, populations, geophysical entities) interact in the ecological AS? How do they relate to each other? Which processes or structural changes do they result in that are important for explaining the emergent behavior of this AS (e.g. change in food web structure, change in soil quality)? How are the ecological interactions in the ecological AS influenced by the social-ecological interactions?