

# Horsens case – Knowledge gathering

---

Knowledge needed regarding climate effects

- Interactions between oceans and atmosphere
- Meteorological processes (i.e. temperature, precipitation, wind, radiations, etc.)
- Hydrological processes:
  - mechanicals (water levels and discharge in rivers, sea level, groundwater table)
  - chemicals (e.g. pollution)
- Cascading effects, e.g:
  - Primary production (availability of resources)
  - Species migration (vegetal especially)
  - Modification of erosion regimes
- Impact on socioeconomic development

Knowledge about extreme events is missing. A better understanding of interactions between oceans and atmosphere is also needed. Relation between runoff/discharge and the spatial extent, velocity, depth, duration of flooding needs to be established (flood hazard maps); at this condition only, flood risk mapping and flood risk zoning can be performed (Cf. European Directive on the management of flood risks).

Other aspects requiring specific investigation:

- Pollutant dispersion and accumulation
- Duration, rhythm, and reversibility of changes (hysteresis)
- Future economic development

Governance and scales issues have to be addressed:

- Jurisdictional and institutional evolutions
- Economical dimensions
- Psychological and societal dimensions

Engineering and planning solutions have to be elicited and tested.

All the components of risk are interlaced and should be assessed in an integrated manner. The use of scenarios is indispensable.