

Adapting to the unknown:  
Legal norms for handling uncertainty in land use planning

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## Uncertainty

- An expression of how unknown a value is, for example a future climate. Uncertainty may be due to inadequate information or disagreement on what is known or not possible to know. [...] Uncertainty may therefore be presented as quantitative measures or through qualitative explanations. (NOU 2010:10)
- Determinism - statistical uncertainty - scenario uncertainty - recognized ignorance - total ignorance (Walker et al., 2003)
- Known knowns - known unknowns - unknown unknowns ("latter tend to be the difficult ones") (defense.gov, 2002)
- Incomplete knowledge at the time of decision

## Uncertainty about future climate in Norway

- All available projections divided into low, middle and high
- “... impossible to state that one projection is more likely than another. Therefore, users must assess these in the light of risk and vulnerability.
- Furthermore, it can't be ruled out that future climate change will end up under the low or over the high estimate.”  
(Hanssen-Bauer et al., 2010, my transl.)

## Need for legal norms

- rule of law
- predictable, reasonable and unbiased use of power
- administrative and judicial review
- limits of municipal discretion

## Planning and building act, 2008

- climate change adaptation a relevant consideration?
- risk and vulnerability analysis (RVA, sec. 4-3) and special consideration zones (SCZ, sec. 11-8) new, important tools
- “The assessment shall show all the risk and vulnerability factors of significance for determining whether the land is suitable for development purposes. [...]
- In land-use plans, the planning authority shall adopt such provisions regarding development in the [SC] zone, including prohibitions, as are necessary to prevent damage and loss.” (sec. 4-3)

## Administrative procedure act, 1967

- The administrative body shall ensure that it is as well as possible informed about the case before a decision is made. (sec. 17, my translation)

## Civil protection act, 2010

- The municipality shall map which unwanted incidents that can occur in the municipality, assess the likelihood of their occurrence, and how they in that case may affect the municipality. (sec. 14, my transl.)
- (Comprehensive RVA, foundation for spatial plans)

## Biodiversity act, 2009

- (principles for administrative decisions regarding biodiversity)
- The requirement for background knowledge shall be reasonable, relating to the character of the case and the risk of damage to biodiversity (sec. 8, my transl.)
- When making a decision without sufficient knowledge about effects on natural environment, care shall be taken to avoid significant damage to biodiversity. In cases of risk for serious or irreversible damage to biodiversity, lack of knowledge shall not be used as a reason to postpone or forgo action (sec. 9, my transl.)

## (Preliminary) conclusions

- Climate change adaptation is a compulsory consideration of land use planning in Norway
- Authorities must (to a reasonable extent) seek the best available knowledge
- Remaining uncertainties should be met with precaution



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