Different studies indicated that diffuse water pollution originates from a limited part of a catchment, only **contributing areas**. Effective reduction of water pollution may be possible by implementing mitigation option on these contributing areas. For that purpose, an exact delineation of the location of contributing areas is mandatory. Contributing areas are characterized by site specific properties:

- Transport processes have to take place: \( A_{\text{active}} \)
- Area has to be connected to the water system: \( A_{\text{connected}} \)
- Compounds of concern have to be available for transport: \( A_{\text{source}} \)

### Approach

1. **Review of scientific concepts of contributing areas:**
   - **Proving the concept**
   - Which prediction tools exist?
   - What are the uncertainties?

**Example of the contributing areas concept for agricultural areas**

#### Erosion

\[
A_{PCA} = A_{\text{active}} \cap A_{\text{connected}} \cap A_{\text{source}}
\]

**A\text{PCA} =** potentially contributing areas

**A\text{active} =** transport processes as a function of soil erodibility, relief (slope length and slope steepness) and precipitation intensity

**A\text{connected} =** hydrological connection to the water system

**A\text{source} =** vegetation cover

#### Herbicides

\[
A_{PCA} = A_{\text{active}} \cap A_{\text{connected}} \cap A_{\text{source}}
\]

e.g. average surface saturation calculated with a physically based hydrological model

**A\text{active} =** areas producing fast flow (surface runoff, preferential flow to subsurface drains)

**A\text{connected} =** hydrological connection to the water system

**A\text{source} =** herbicides available for transport

### Literature:

- Aksoy et al. 2005, Catena 64, 247-271
- Cannavo et al. 2008, Advances in Agronomy 97, 131-174
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- Prasuhn et al. 2007 Agrarforschung 14, 120-127
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