Country case study Germany

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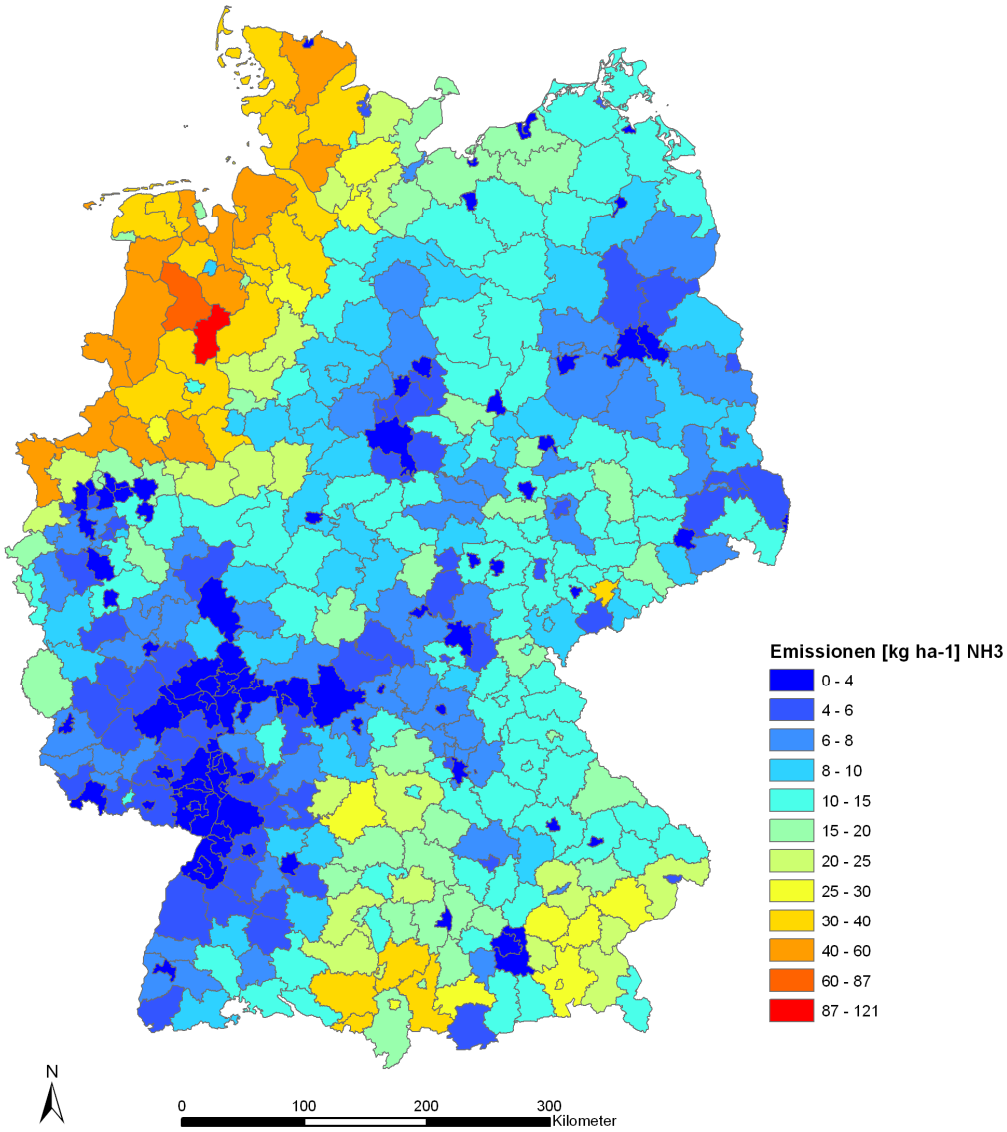
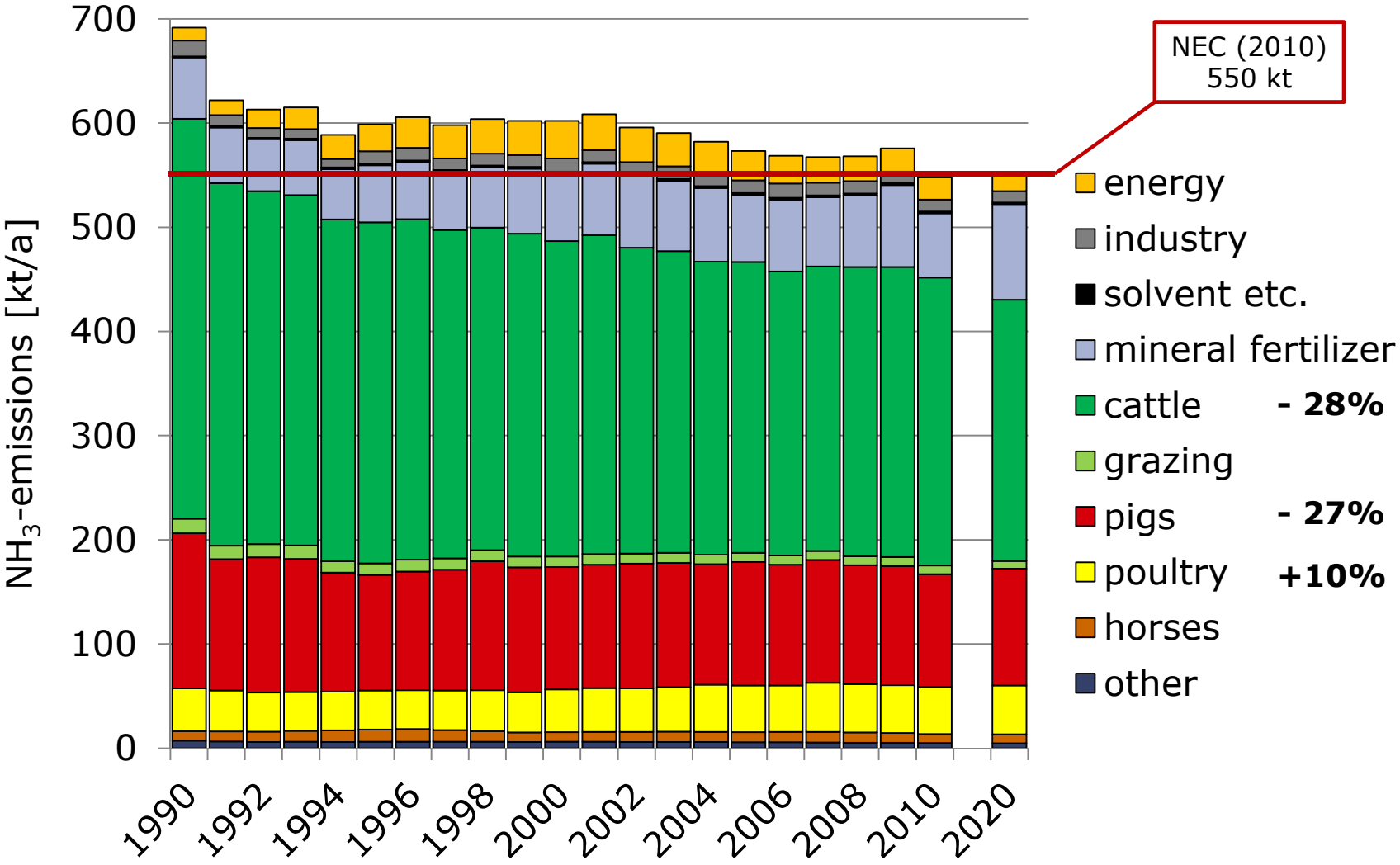
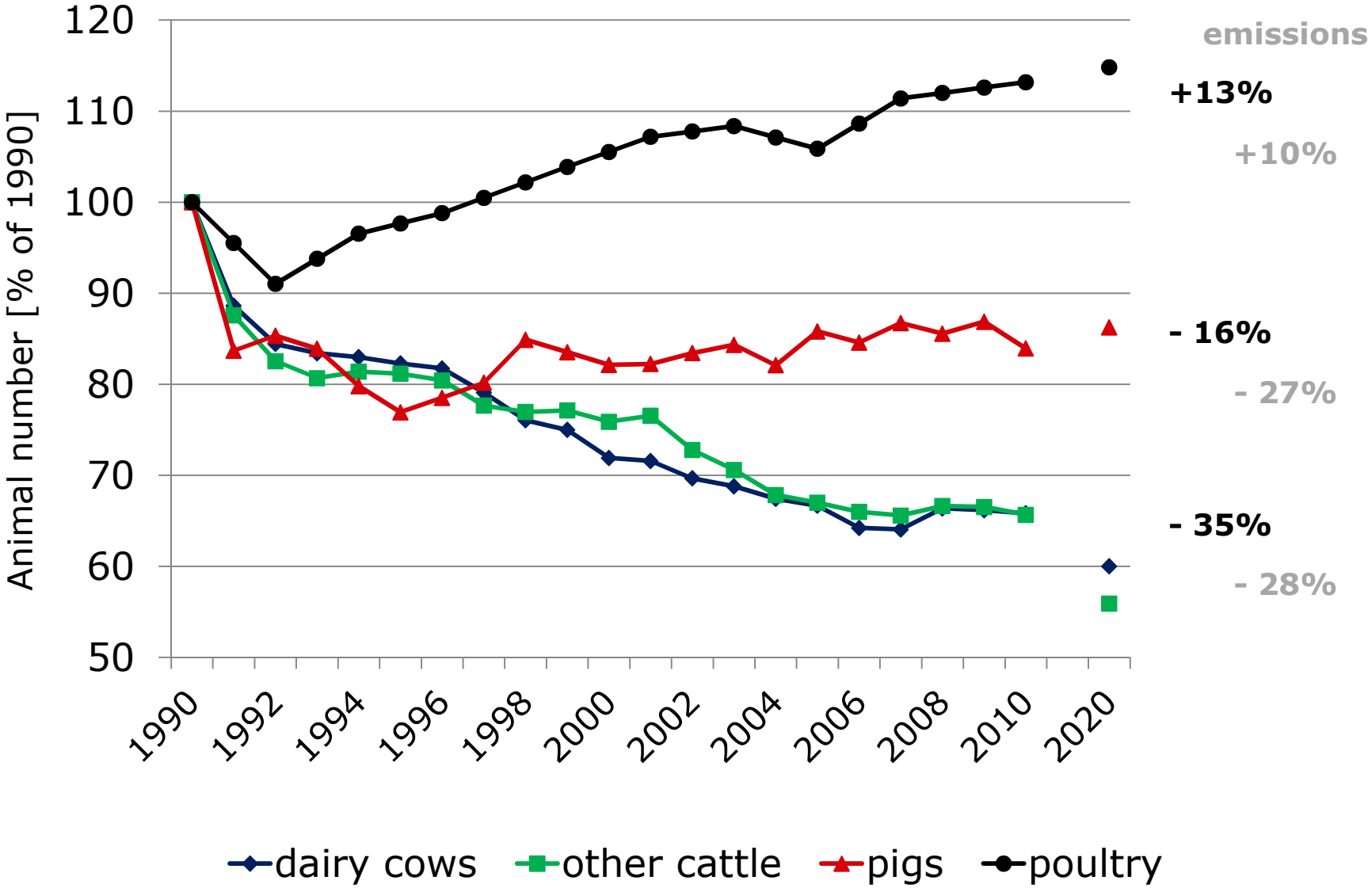


Trend of ammonia emissions

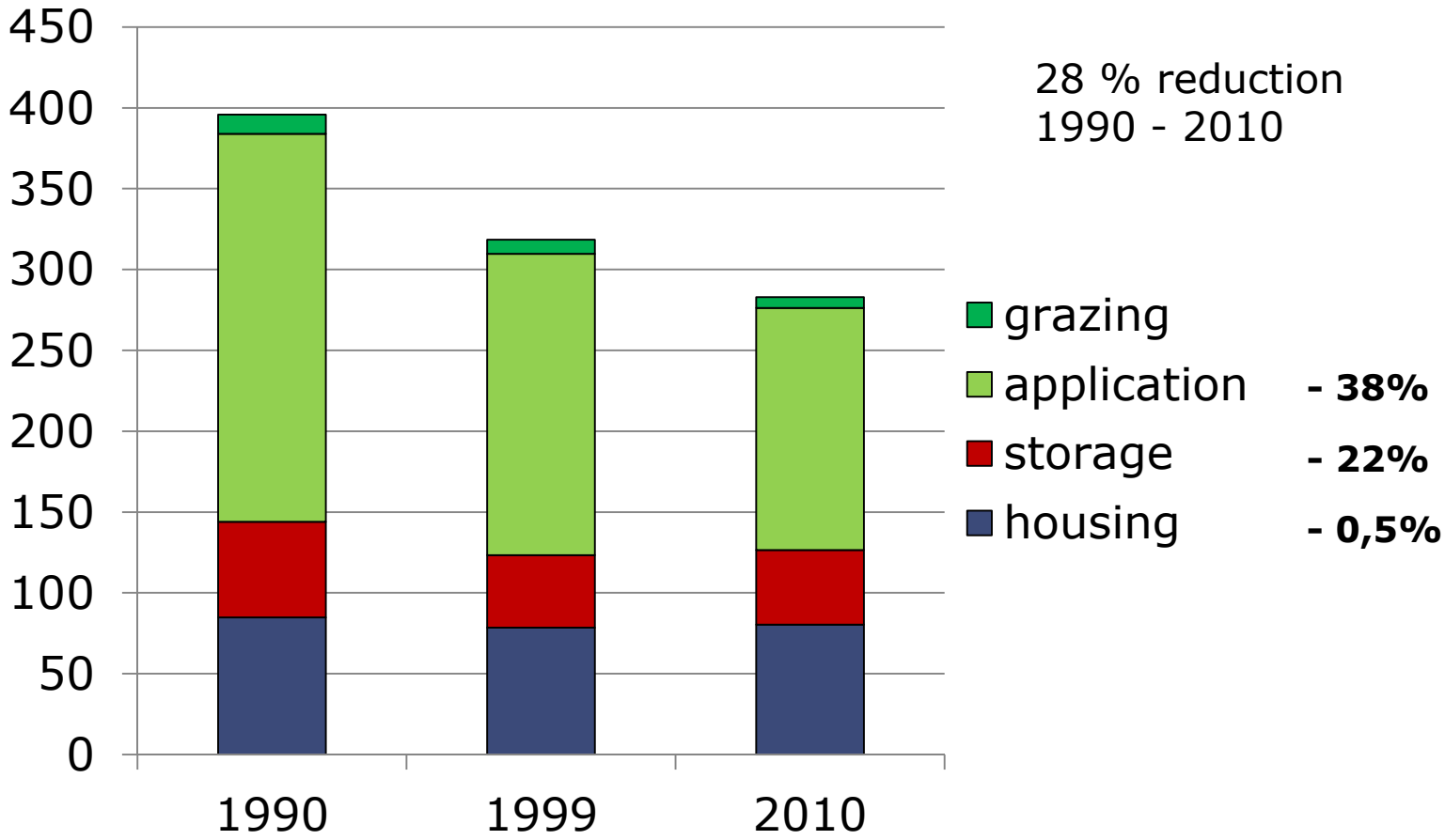


Number of animals

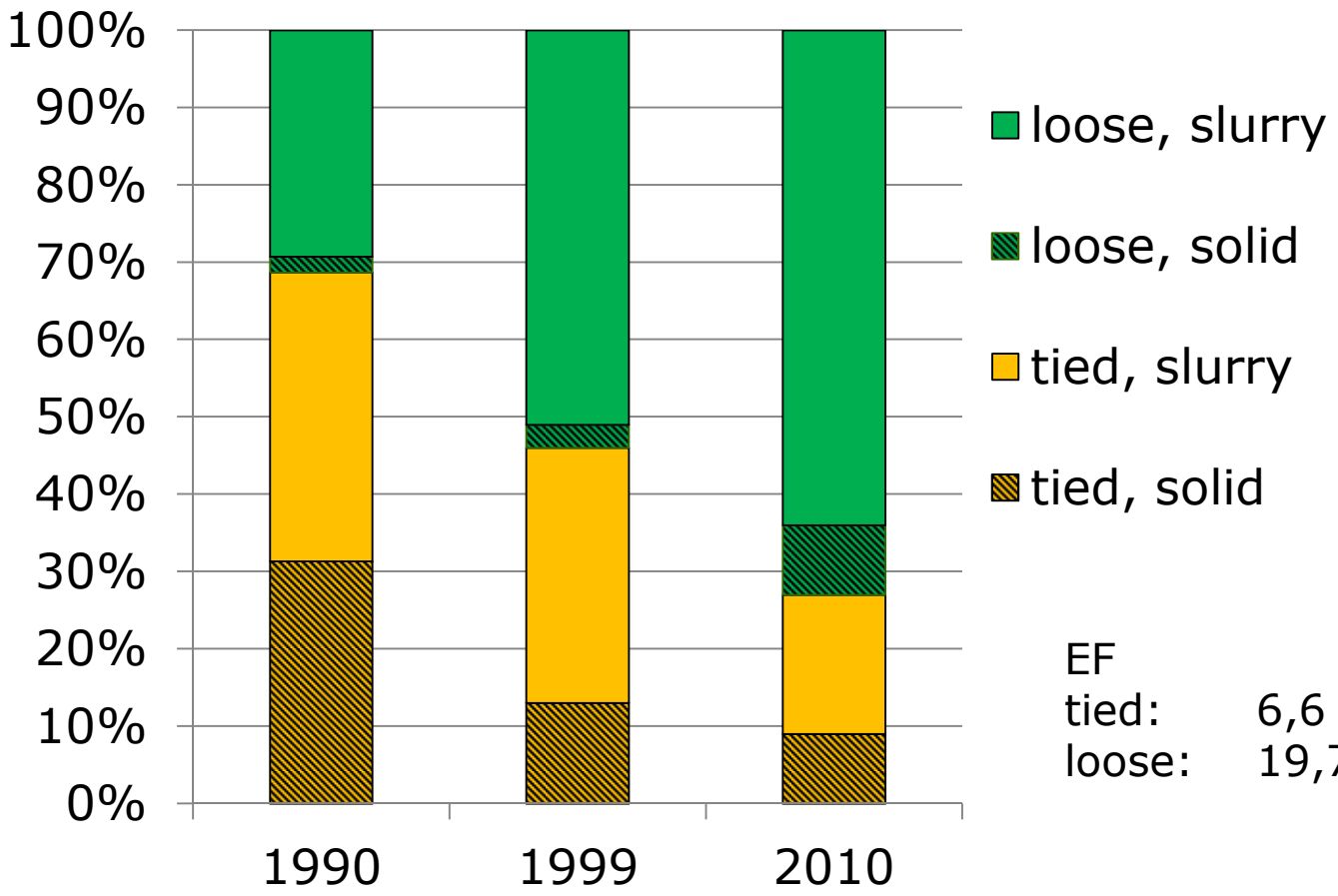


Emissions from different compartments

Dairy cows



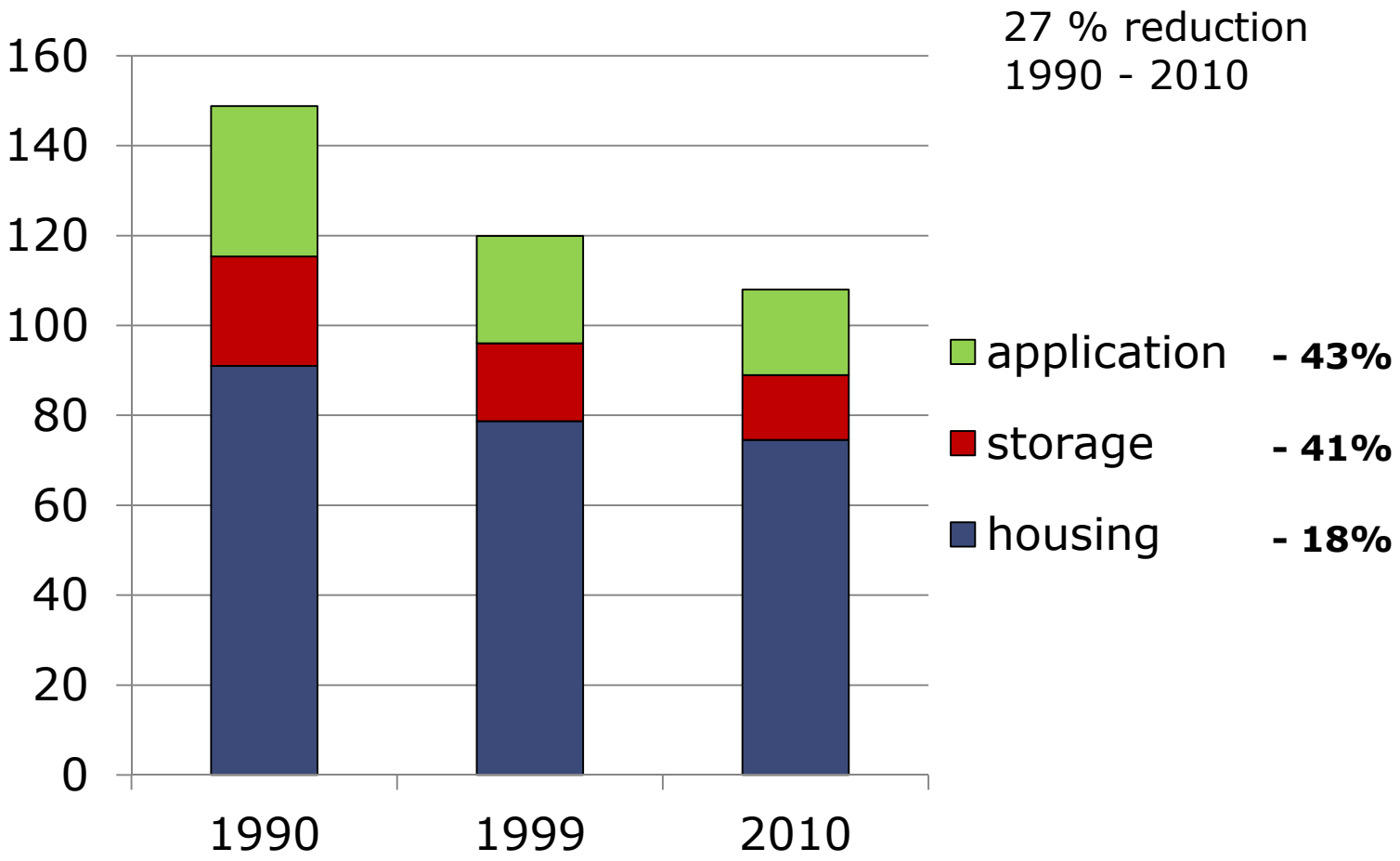
Share of housing systems
dairy cattle



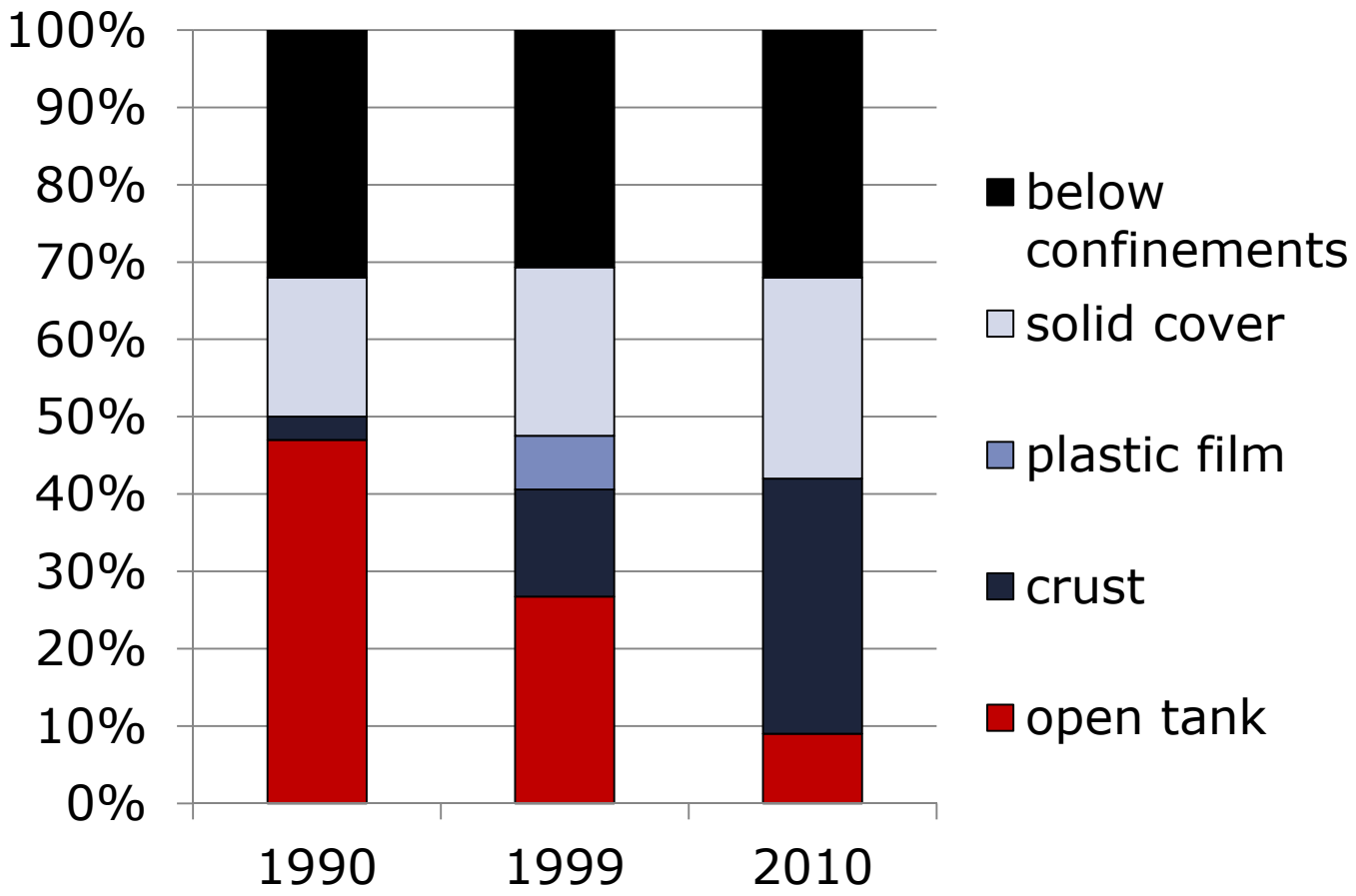
EF
tied: 6,6 %
loose: 19,7 %

emissions from different compartments

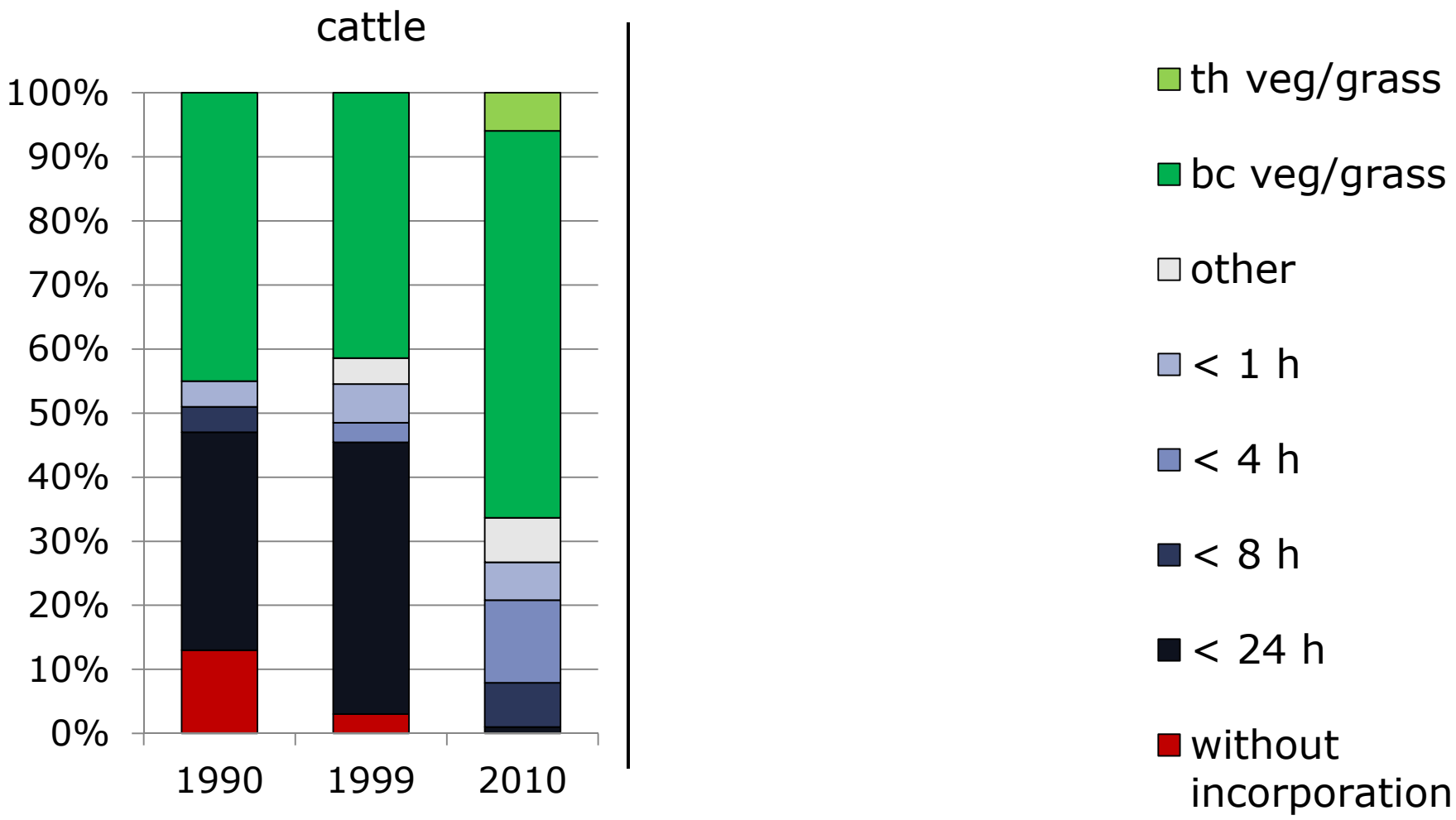
pigs



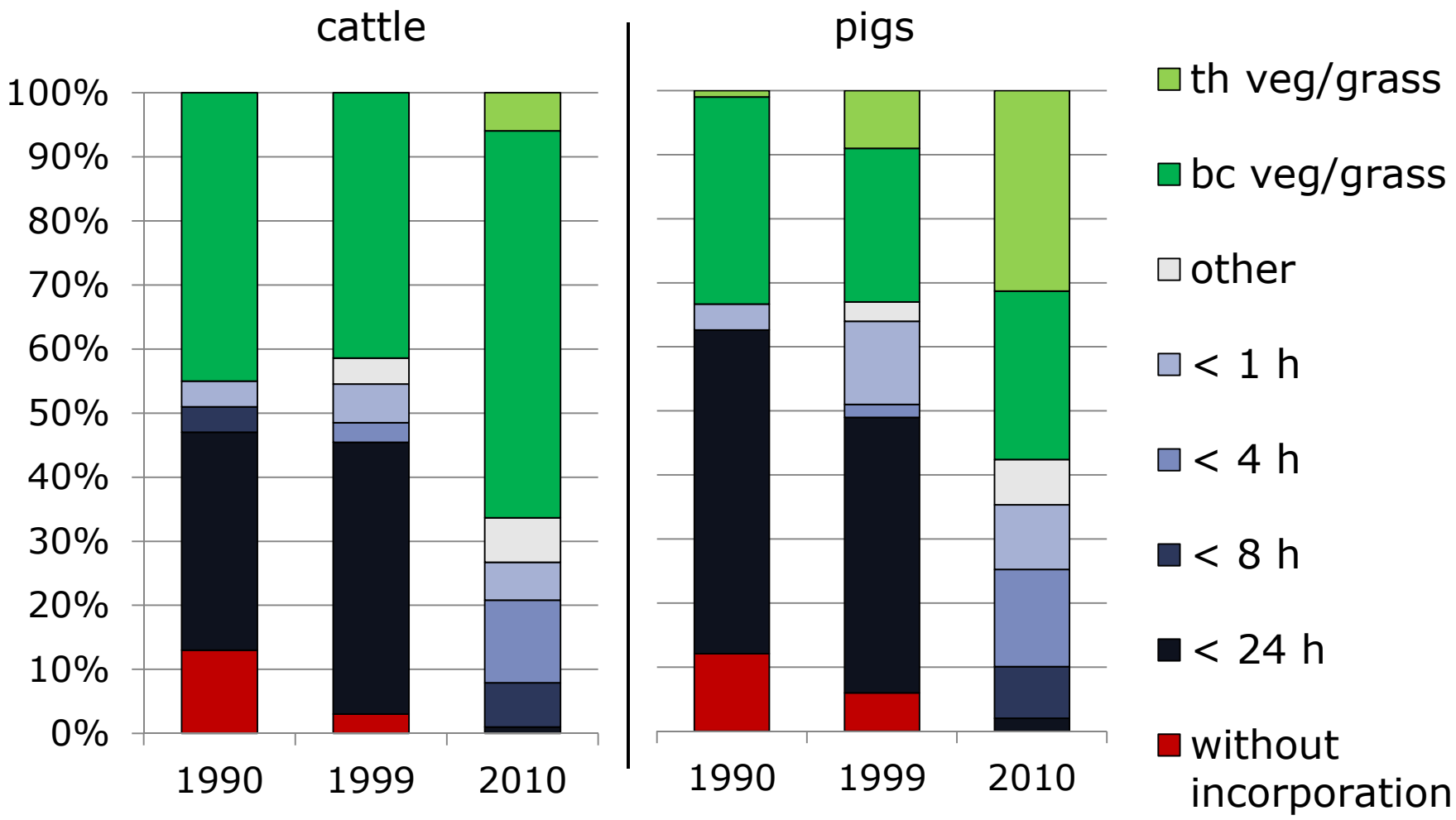
Storage systems
pig slurry



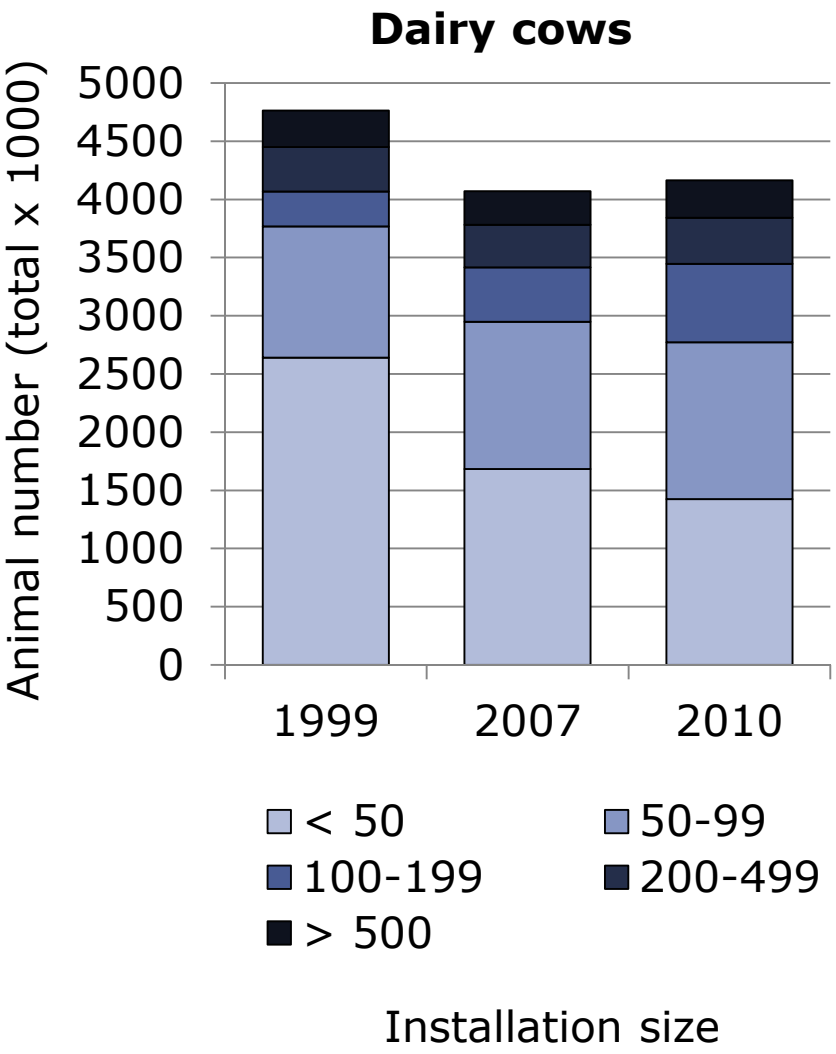
application systems
share of technologies used



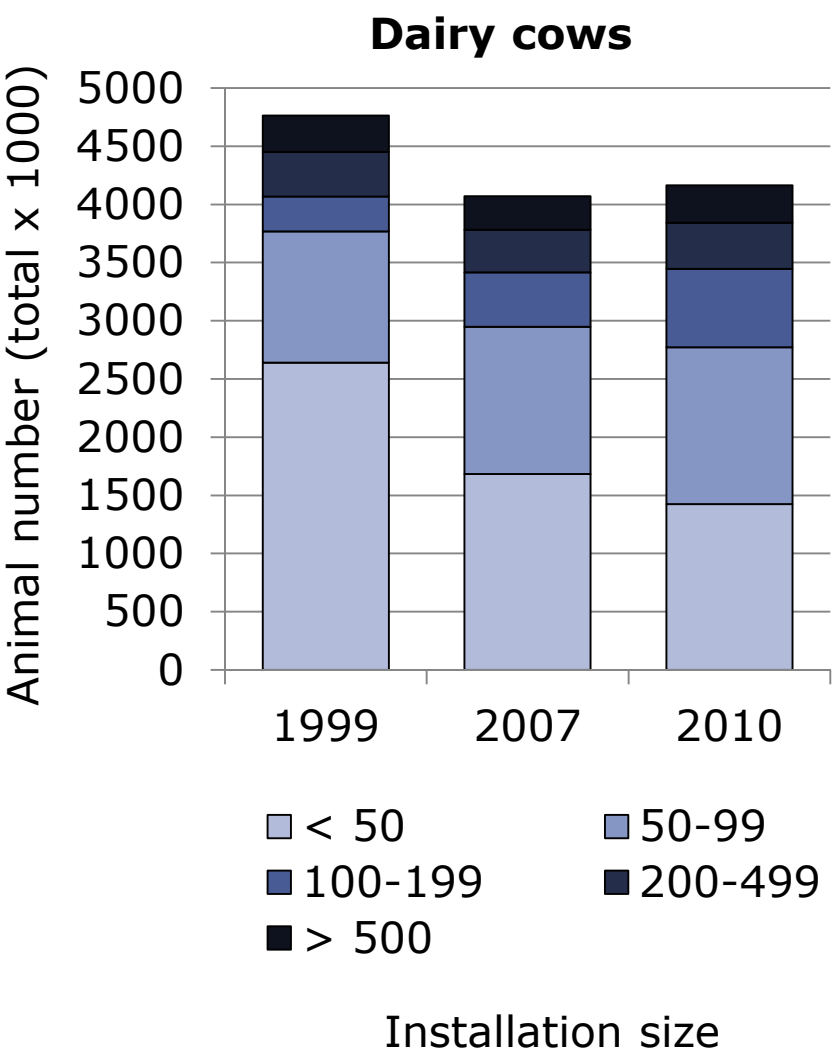
application systems
share of technologies used

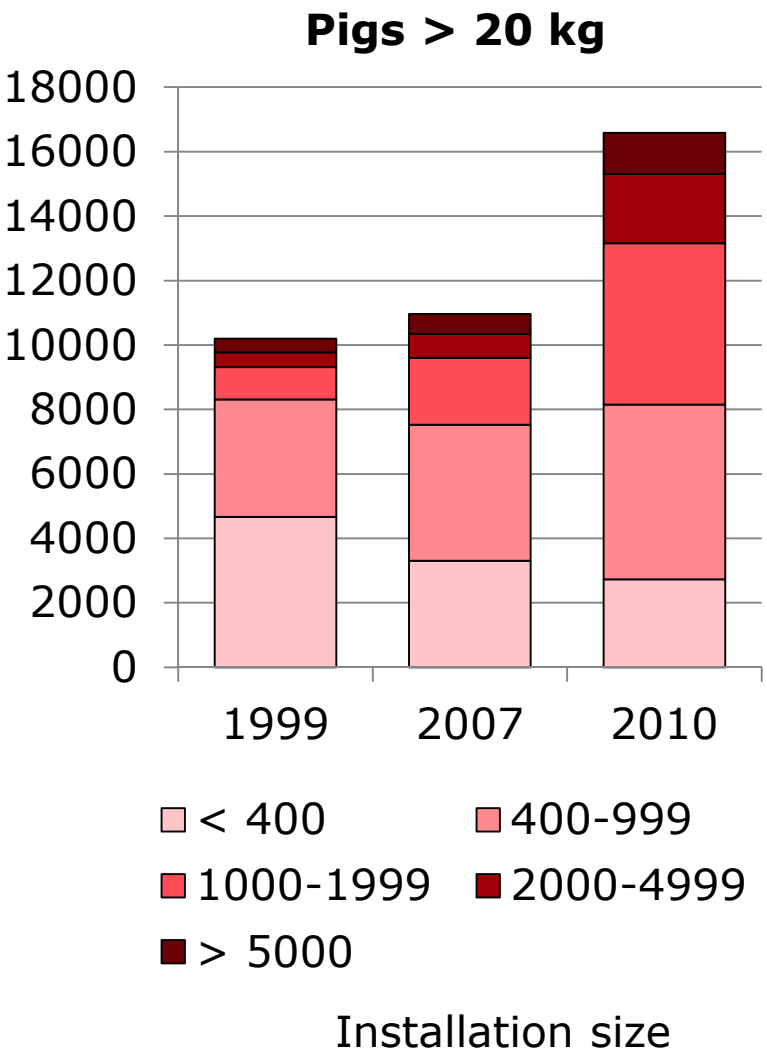


Farm sizes / number of animals in 1000



Farm sizes / number of animals in 1000





KTBL

Successful activities

- Fertilization act
  - Farm-N-balances (> 10 ha)
  - Fast incorporation of slurries (all farms)
- Regulations for IED-farms (storage cover, low protein feeding)
- Local regulations on air treatment (pig production)

Problems faced

- Lack of reliable statistical data on implemenation of some measures
  - Low protein feeding strategies
  - Application techniques used
  - storage covers implemented (artificial crusts)

→ Survey on feeding strategies

→ Clarification of incorporation time < 4h by federal state regulations

Problems to be adressed

- Increase of pig and poultry production
- Biogas production residues: emissions not considered so far (10 - 30 kt)
- Variability of amount in urea fertilization (+/- 10 kt)
- Increased spreading on vegetation (without emission reduction)

Future needs

- Additional efforts on emission reduction
  - Covering of stores for pig slurry
  - Immediate incorporation of poultry manure
  - Promotion of low emission application into growing crops and grassland
  - Further promotion of N-adapted feeding strategies
- Research on emission factors from urea
  (evidence, that EF is too high for German conditions)

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Thank you for your attention