Report on

Session " Effects of energy crop cultivation on land-use, biodiversity & ecosystem services"

Session chair: Sando Pütz Minute taker: Maria Langhammer

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Session "Effects of energy crop cultivation on land-use, biodiversity & ecosystem services"

Main topics:

Land use modelling and ecosystem services

- Development of an agricultural management database for application in regional scale simulation models
- Landscape level research of pest infestation on maize cultivation
- Landscape level trade off analysis with Pareto optimization

Biodiversity impacts

• Bioenergy and landscape configuration impacts on four farmland birds

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- Impact of 2nd generation crops on biodiversity:
 - Silphium perforatum (Cup plant)
 - Short rotation coppices as strips within agricultural fields

Page 2

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Main results and outcomes:

- Broad perspective on many environmental impacts, examples for biodiversity and ecosystem services, e.g. water use, nitrogen level in the landscape
- At the landscape level there is need to assess all presented environmental impacts together to present options for sustainable management from the scientific side

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 Intensive discussion which methods are available to evaluate multiple environmental impacts jointly: e.g. ecosystem services approach and Pareto optimization approach

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Outlook and research need:

- Need to include social and socioeconomic aspects into environmental modelling approaches
- Need to study, model and assess jointly economic and environmental impacts
- Need to develop modelling and optimization strategies including multiple (all relevant/important) environmental impacts.

