

Agricultural sector model PASMA

Application in evaluation of the Austrian CAP
programmes

Perspective of the Managing Authority

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Background of the application of PASMA

- How to assess the overall impact of the CAP in Austria?
 - ex-ante & ex-post applications
- No instrument / reference available at the MA
- Simulation model to develop a BASELINE:
 - Tools needed to overcome the information gap on counterfactual developments
 - Simulation of production, income, labour and environmental effects of expected price and policy scenarios
 - Regional (NUTS-3 resolution) & structural consequences

Background of the application of PASMA

- „**Positive Agricultural Sector Model Austria**“ developed by Erwin Schmid & Franz Sinabell, BOKU University Vienna & WIFO in 2002 (published through peer-reviewed journals)
- Early application: assessment of medium-term consequences of the EU membership for Austrian agriculture in 2006
- Well suited for detailed sectoral analyses
- Gradually established & useful model: progressively developed together with MA

RDPs since 2000: Evolution of PASMA modelling

00-06

First intentions to assess the overall impact of the CAP since the EU membership (without modelling)

Basic indicators such as

employment , standard gross margins, added value, regional distribution



07-13

First application of PASMA (ex-post)

development of **counterfactual scenarios**

In addition:

gross value added, GHG emissions, land use



14-20

Mid-term and ex-post
Question 24,27, Impact indicators 2,3,7

Advanced modelling of GHG emissions from agriculture (net effects)

Used as **reference** regarding: economic output (focus area 2A), **Agri-environmental programme** (ÖPUL)

CAP Strategic Plan 23-27 (IR 2022/1475)

- Calculations (including PASMA simulations) from RDP14-20: **crucial for SWOT**, national needs, overall development of AT CSP
- PASMA: **part of evaluation plan** (study on land use)
- baseline for mid-term und ex-post evaluations: especially for objective A&B (**reference data for evaluators**)
- Net effects: PMEF Impact indicators I.2, I.3, I.4, I.5, I.10, I.14, I.15 and I.26
- Results used for **conceptualization of the next** CAP period
- Continuous adaptations of the model on mid-term and ex-post evaluation

SO 7



Challenges and usefulness of PASMA for the MA

Challenges:

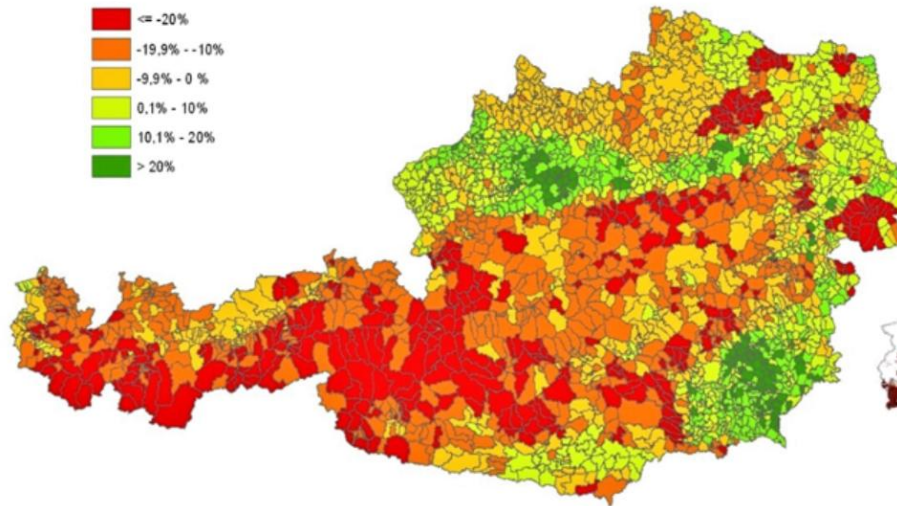
- Reference year: dependant on data availability
- Modelling uncertainties of agricultural sector & crises (war, pandemia)
- Static comparison with reference year

Usefulness:

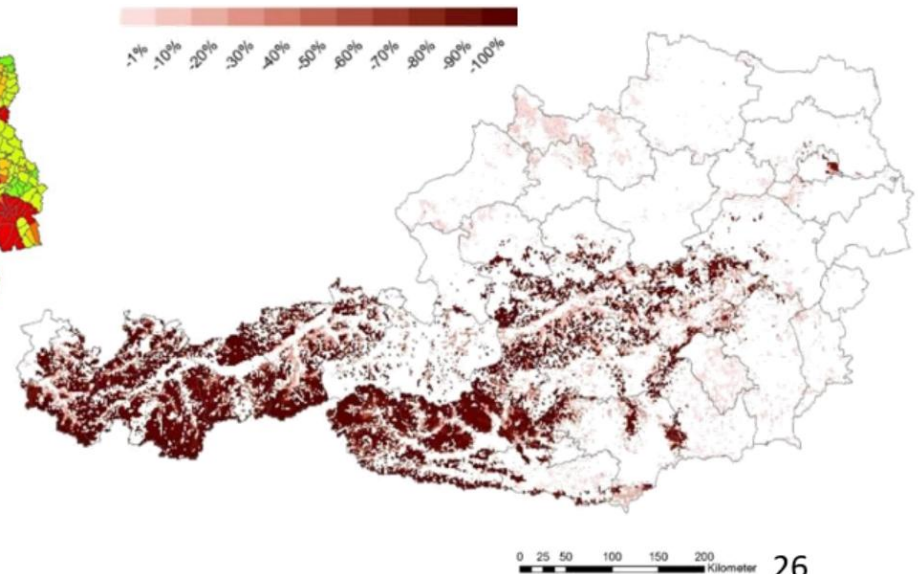
- Well suited to present net effects of the programme

Example of a graph from PASMA Scenario: No CAP payments

Structural change in agriculture:
Gross value added



Loss of grassland (especially extensive)



Selected articles describing PASMA

- Schönhart, M., Trautvetter, H., Parajka, J., Blaschke, A.P., Hepp, G., Kirchner, M., Mitter, H., Schmid, E., Strenn, B., Zessner, M., 2018. Modelled impacts of policies and climate change on land use and water quality in Austria. *Land Use Policy* 76, 500–514.
- Kirchner, M., Schönhart, M., Schmid, E., 2016. Spatial impacts of the CAP post-2013 and climate change scenarios on agricultural intensification and environment in Austria. *Ecological Economics* 123, 35–56.
- Kirchner, M., Schmidt, J., Kindermann, G., Kulmer, V., Mitter, H., Prettenthaler, F., Rüdiss, J., Schauppenlehner, T., Schönhart, M., Strauss, F., Tappeiner, U., Tasser, E., Schmid, E., 2015. Ecosystem services and economic development in Austrian agricultural landscapes - The impact of policy and climate change scenarios on trade-offs and synergies. *Ecological Economics* 109, 161–174.
- Schönhart, M., Mitter, H., Schmid, E., Heinrich, G., Gobiet, A., 2014. Integrated Analysis of Climate Change Impacts and Adaptation Measures in Austrian Agriculture. *German Journal of Agricultural Economics* 63, 156–176.
- Schönhart, M., Koland, O., Schmid, E., Bednar-Friedl, B., Mitter, H., 2013. Linking bottom-up and top-down models to analyze climate change impacts on Austrian agriculture. *Journal of the Austrian Society of Agricultural Economics* 22, 33–42.

Thank you for your attention!

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