

**COST 734 WG2: Evaluation of the Current
Trends of Agroclimatic Indices and Simulation
Model Outputs describing Agricultural Impacts
and Hazard Levels**

Summary of the WG2 questionnaire

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- 1. COST 734 WG2: TASKS,
RESPONSIBILITIES, ACTIVITIES AND
DELIVERABLES**

Summarizing Trends in Agroclimatic Indices and Crop Model Outputs in Europe

(contents)

1.3. Trend Calculation and significant testing

1.3.1 Least squares

1.3.2. Minimum Absolute Deviation

1.3.3. Three-group resistant line

1.3.4. Logistic Regression

1.3.5. Confidence intervals for least squares

1.3.6. Linear Correlation

1.3.7. Spearman rank-order correlation coefficient

1.3.8. Kendall-Tau

1.3.9. Resampling

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. STATE OF THE ART

- **2.1. Observed climatic and agroclimatic trends**
- Phenological changes
- Northern Europe: increased crop stress during hotter, drier summers; increased risk to crops from hail
- Britain: increased area of silage maize - more favorable conditions due to warmer summer temperatures
- France: Increases in growing season of grapevine; changes in wine quality

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. 2.2. Agroclimatic indices and crop models

2.2.1. Agroclimatic indices

examples

2.2.2. Crop models

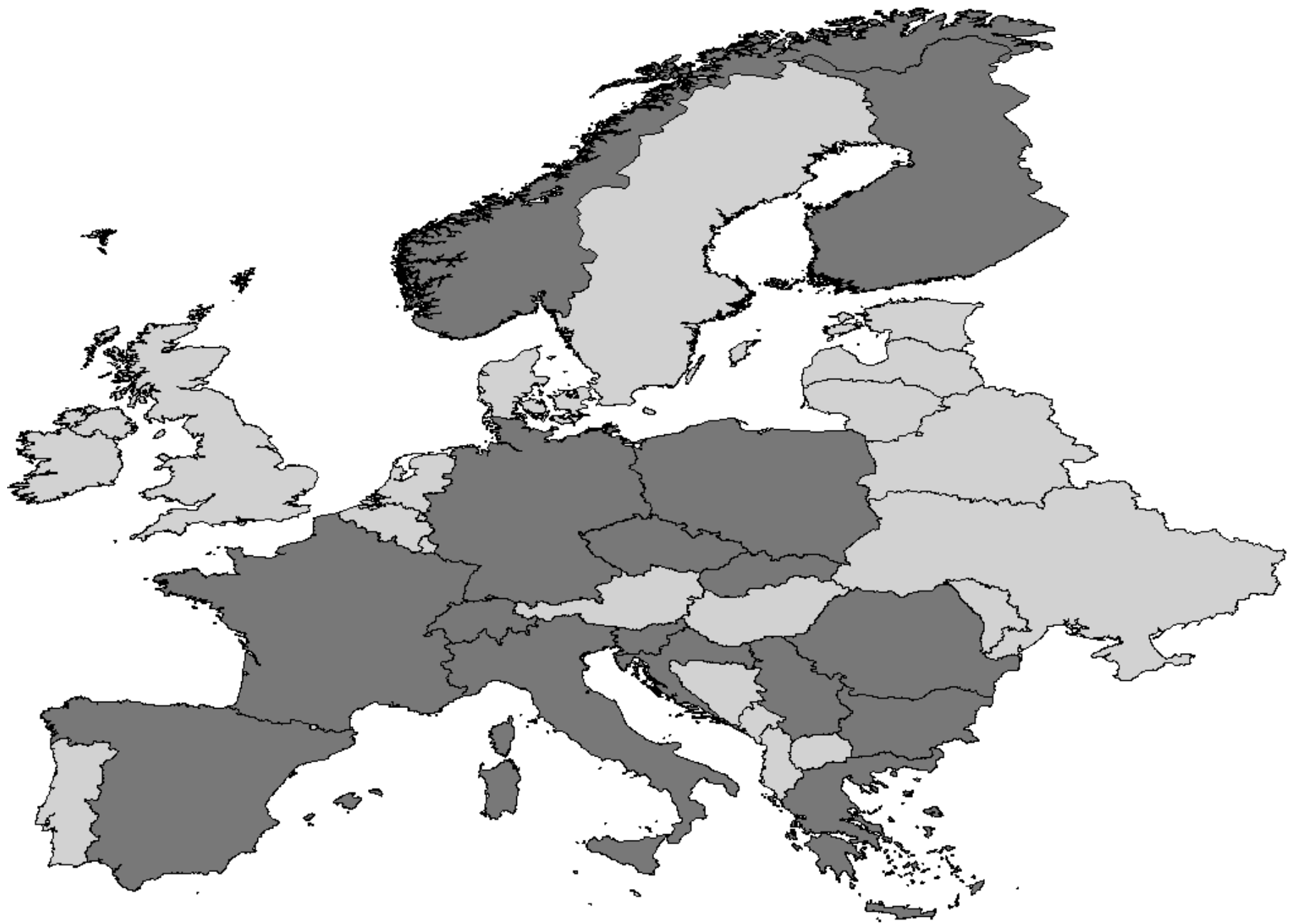
General info

2.3. Examples of previous case studies

England , Switzerland, Hungary, Canada

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3. GOAL: A QUESTIONNAIRE



European countries (in dark grey) submitted the questionnaire

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- **4. SUMMARIZING THE QUESTIONNAIRE**
- **4.1. Long-term meteorological and agrometeorological data**
- ***4.1.1. Long-term meteorological data***
- ***4.1.1.1. An example from Norway***
- ***4.1.2. Long-term agrometeorological data***

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- **4.2. Numerical weather models, regional climate models, weather generators**
- ***4.2.1. Numerical weather models***
- ***4.2.2 Climate models***
- ***4.2.3. Weather generators***

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- ***4.3. Homogenization tests/procedures***

homogenization tests/procedures

Standard Normal Homogeneity Test (Croatia, etc.):

- Homogeneity testing of the temperature time series was performed by Alexandersson's SNHT test. The test requires a time series of monthly values from the test station and one or more reference series. The reference series are compared with the test series to estimate the relative homogeneity of the test series. The test series and reference series are obtained from monthly data on a seasonal and annual basis.
- a license is needed

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- ***4.4. Statistical methods for analyses of meteorological and simulation model output related time series***
- ***4.4.1. Country examples***

statistical methods for analyses of time series

Spain:

- **Trend Calculation: Least squares; Minimum Absolute Deviation; Significance Testing: Confidence intervals for least squares, the Mann-Kendall and Spearman rank statistics**
- **software: free**

*Libiseller C. and Grimvall A., 2002 .Performance of Partial Mann Kendall Tests for Trend Detection in the Presence of Covariates, *Environmetrics* 13,71-84*

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- ***4.5. Additional information listed within the questionnaire***
- ***5. CONCLUDING REMARKS***

Data, models, homogenization, trends

- ***Acknowledgments***
- ***References***