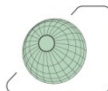


Action 734

Impacts of Climate change and Variability on European Agriculture

ESSEM



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Participating countries: AT, BE, BG, HR, CY, CZ, DK, FI, FR, DE, GR, HU, IE, IT, LU, NL, NO, PL, PT, RO, SR, SK, SI, ES, SE, CH, TR, UK
Non-COST institutions: National Drought Mitigation Centre, University of Nebraska–Lincoln USA; Lincoln University, Canterbury New Zealand; Joint Research Centre Ispra, Agriculture Unit (ex-Agrifish) Italy; WMO – Agricultural Meteorology Division

Objectives

The evaluation of possible impacts from climate change and variability on agriculture and the assessment of critical thresholds for various European areas.

The collection and review of existing agroclimatic indices and simulation models to assess hazard impacts on various European agricultural areas relating hazards to climatic conditions.

Building climate scenarios for the next few decades

The definition of harmonised criteria to evaluate the impacts of climatic change and variability on agriculture

The definition of warning systems guidelines

Working Group 1

AGROCLIMATIC INDICES AND SIMULATION MODELS

Simulation models and indices describing the effect of climate on a specific crop and a specific process (phenological development, growth, damage on production, disease development, water balance) were collected and analysed.

Working Group 2 & 2.1

2 EVALUATION OF THE CURRENT TRENDS OF AGROCLIMATIC INDICES AND SIMULATION MODEL OUTPUTS DESCRIBING AGRICULTURAL IMPACTS AND HAZARD LEVELS

Time-series statistical analysis will be performed to evaluate the homogeneity of the historical data and to precisely separate the climate change effect from other sources of variability. The determination of inter-annual variability of agroclimatic conditions as well as the temporal trend will be taken into consideration

Sub WG 2.1 REMOTE SENSING

Evaluation and assessment of the use of satellite data for agro-climate research, and in particular their integration into high-quality, globally-integrated climate products

Working Group 3

DEVELOPING AND ASSESSING FUTURE REGIONAL AND LOCAL SCENARIOS OF AGROCLIMATIC CONDITIONS

WG3 activity will be developed collecting the future scenarios over European regions. The analysis will be centered on the available scenarios, also depending on their spatial and temporal resolution. Agroclimatic indices and simulation models will be applied to available data in order to obtain a description of future change (frequency, intensity, trend) in climatic and hazard impacts on agricultural activities (crop protection, watering, site selection, etc.).

Working Group 4

RISK ASSESSMENT AND FORESEEN IMPACTS ON AGRICULTURE

The analysis will be focused on the evaluation of the hazard levels for agriculture and the possible consequences for natural resources. Impacts in terms of production quality and quantity, biological and physical damages and seasonal changes will be mainly considered. Risk assessment will be carried out and the development of warning systems will be evaluated. Critical thresholds will be determined according to the characteristics of agriculture in European agricultural areas.

Main Achievements or Expected Results:

- Active and fruitful participation of delegates and experts
- Numerous connections established with international organisation and non-cost countries (WMO, JRC-Ispra, New Zealand, USA, Russia, EEA, research projects.)
- Good involvement of Early Stage Researchers
- Survey of agrometeorological practices and applications in Europe regarding climate change impacts
- Preliminary assessment of current trends of agroclimatic indices and variability and analysis of crop data to apply simulation models and remote sensing techniques