



HAL
open science

The FACCE-ERA-NET+ project Climate-CAFÉ: Climate change adaptability of cropping and farming systems for Europe

Eric Justes, Walter A.H. Rossing, Johann Bachinger, Georg Carlsson, Raphael Charles, Julie Constantin, Helena Gomez-Macpherson, Marjoleine H. Hanegraaf, Henrik Hauggaard-Nielsen, Erik Steen Jensen, et al.

► To cite this version:

Eric Justes, Walter A.H. Rossing, Johann Bachinger, Georg Carlsson, Raphael Charles, et al.. The FACCE-ERA-NET+ project Climate-CAFÉ: Climate change adaptability of cropping and farming systems for Europe. Climate-Smart Agriculture 2015, Mar 2015, Montpellier, France. , 227 p., 2015, Climate Smart Agriculture 2015. hal-01602259

HAL Id: hal-01602259

<https://hal.science/hal-01602259>

Submitted on 3 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

CLIMATE-SMART
Agriculture
2015



Global Science Conference

March 16-18, 2015
Le Corum, Montpellier France

Parallel Session L3

Towards Climate- smart Solutions

Wednesday, 18 March 2015

8:30–12:30

58. The FACCE-ERA-NET+ project Climate-CAFÉ: climate change adaptability of cropping and farming systems for Europe

Justes Eric^{1*}, Rossing Walter A.H.^{2*}, Bachinger Johann³, Carlsson Georg⁴, Charles Raphaël⁵, Constantin Julie¹, Gomez-Macpherson Helena⁶, Hanegraaf Marjoleine⁷, Hauggaard-Nielsen Henrik⁸, Jensen Erik S.⁴, Koopmans Chris J.⁹, Mary Bruno¹⁰, Palmberg Cecilia¹¹, Raynal Hélène¹, Reckling Moritz³, Rees Robert M.¹², Scholberg Johannes M.S.², Six Johan¹³, Stoddard Fred¹⁴, Topp Kairsty¹², Watson Christine A.¹², Willaume Magali¹, Zander Peter³, Tittone Pablo²

¹INRA, UMR AGIR and RECORD Platform, Centre INRA Toulouse, 31326 Castanet-Tolosan, France

²Wageningen University, Farming Systems Ecology, 6700 AK Wageningen, the Netherlands

³ZALF, Leibniz Centre for Agricultural Landscape Research (ZALF), 15374 Müncheberg, Germany

⁴Swedish University of Agricultural Sciences, Dep. Biosystems & Technology, SE-23053 Alnarp, Sweden

⁵Agroscope, Institute for Plant Production Sciences, 1260 Nyon, Switzerland

⁶CSIC, Institute for Sustainable Agriculture, 14003 Cordoba, Spain

⁷Nutrient Management Institute, Binnenhaven 5, 6709 PD Wageningen, the Netherlands

⁸Roskilde University, Dep. of Environmental, Social & Spatial Change, 4000 Roskilde, Denmark

⁹Louis Bolk Institute, Hoofdstraat 24, 3972LA Driebergen, the Netherlands

¹⁰INRA, Unité AgrolImpact de Laon-Mons, 02000 Barenton-Bugny, France

¹¹Swedish University of Agricultural Sciences, Dep. Agricultural Research for Northern Sweden, SE-90183 Umeå, Sweden

¹²Scotland's Rural College, Edinburgh EH9 3JG, United Kingdom

¹³ETH-Zurich, Sustainable Agroecosystems, 8092 Zurich, Switzerland

¹⁴Department of Agricultural Sciences, 00014 University of Helsinki, Finland

* Coordinators of the project Climate-CAFÉ (started mid-November 2014; 3-year project)

Climate-CAFÉ aims to improve the “adaptive capacity” of arable and forage based farming systems to climate change (CC) through ecologically intensive adaptation strategies. Strategies will be evaluated at cropping and farming systems as well as regional levels for “Adaptation Pilots” along a North-South climate gradient in the EU. Three categories of strategies will be evaluated: i) Resistance strategies that seek to maintain the status quo through management actions that reduce perturbations due to CC; ii) Resilience strategies requiring systemic adaptation at field and farm level for increasing the adaptive capacity after a climate disturbance; iii) Transformative strategies addressing needs and possibilities for re-configuration of cropping and farming systems. Strategy evaluation will reveal synergies and trade-offs among objectives and their indicators at different scales under 2050-2100 IPCC scenarios. The proposed adaptation strategies will include improved soil and water management via ecological intensification, including new cultivars and cultivar mixtures, novel rotations, alternative tillage options, and the inclusion of legumes cover- and intercrops. Since adaptation is context-specific, the project will work in “Adaptation Pilots” and local networks of researchers, advisors and farmers, representative of regional cropping and farming systems. Experimental data (SE, FI, UK, CH, FR and SP), expert technical and farmer knowledge, and simulation models at the scales of crops (STICS, DAYCENT), farms and landscapes (MODAM, FarmDESIGN) will be used to characterise adaptation strategies and foster learning in participatory co-design workshops. The expected result of the Climate-CAFÉ project is an overview of potential CC adaptation measures at the three considered levels for selected sites across the EU, along with mutual learning experiences for improved understanding and acceptability of CC adaptation strategies among farmers and other stakeholders.