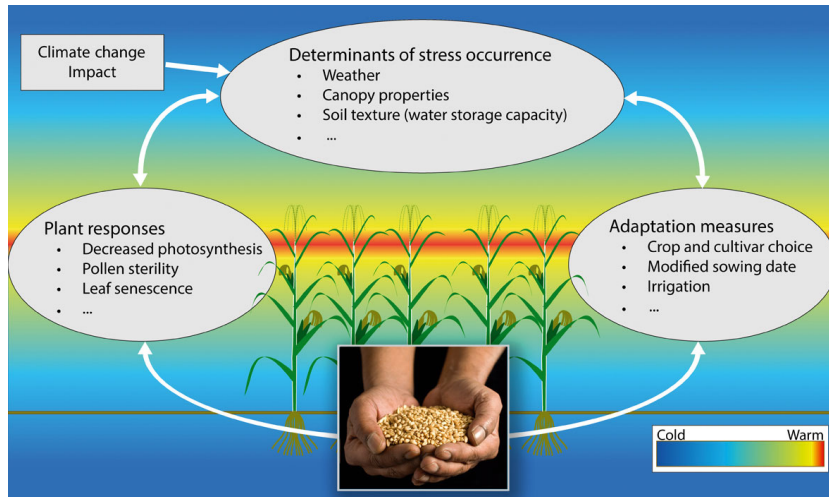


Modelling climate change impacts for food security

Editors: M. Bindi, T. Palosuo, M. Trnka, M. A. Semenov



Climate change may have strong impacts on food security, and crop models that synthesise bio-physical processes are currently the primary scientific tools available to assess its potential effect on crop production. *Image adapted from Siebert & Ewert (2014; Environ Res Lett 9:041001) and Rothamstead Research*

SPECIALS of Climate Research (CR) present important new information on climate phenomena measured and assessed by closely coordinated group efforts. They concentrate on specific research themes or geographic areas.

CR SPECIAL 31 evaluates current state-of-the-art crop modelling applications and their future role in climate risk assessment. The Special is comprised of fifteen studies focusing on Europe and Africa, which were carried out to improve crop modelling tools and applications in climate change assessments, elucidate uncertainties in the modelling of impacts in agriculture,

and assess climate-change impact and adaptation strategies in agriculture.

Contributions to this CR SPECIAL highlight the potential of crop models — in combination with seasonal climate forecasts and long-term climate scenarios — for assessing climate change impacts in the agricultural sector. The studies document the need for high-quality calibration data in crop modelling, particularly for model responses to changes in soil and crop management.

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Nordbunte 23 (+3, 5, 28, 30), 21385 Oldendorf/Luhe, Germany
Tel: (+49) (0)4132 7127, Fax: (+49) (0)4132 8883
Email: ir@int-res.com, Internet: www.int-res.com

