



18-19 NOVEMBER 2019

Science-based solutions

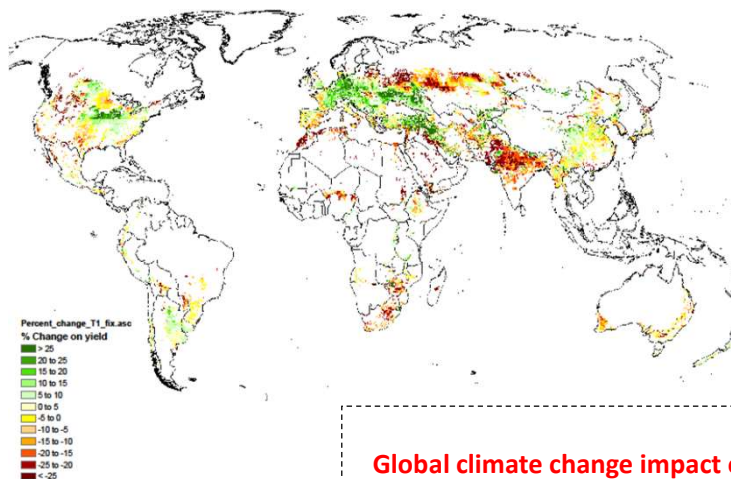
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CIMMYT, Mexico



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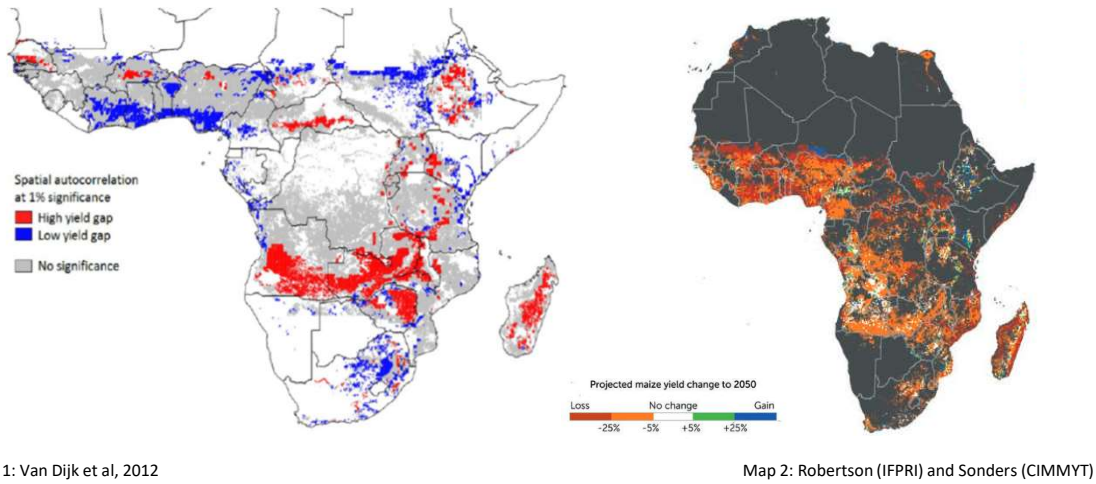
Climate change effects: e.g. wheat yield



Pequeno et al 2019 (in prep. for Climatic Change)

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Yield gap: Impact of changing climates on maize production in Africa

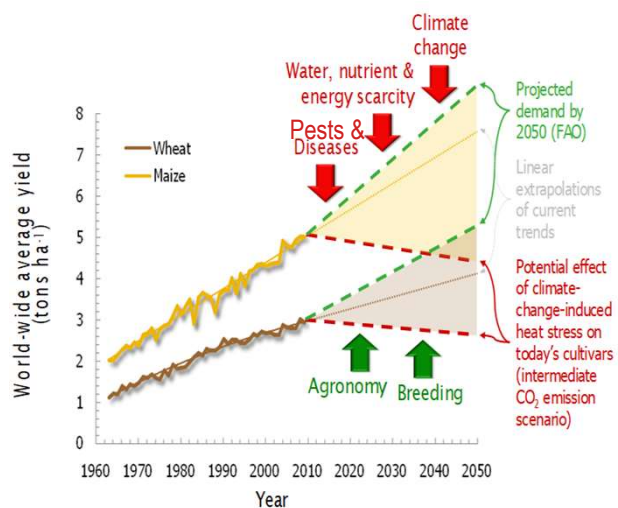


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Pressures on staples

For food prices to remain constant, annual yield gains would have to increase:

- from 1.2% - 1.7% for maize
- from 1.1% - 1.7% for wheat



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Agricultural green production gap

- Filling the yield gap should not always be the only objective
 - Producing the same with less resources:

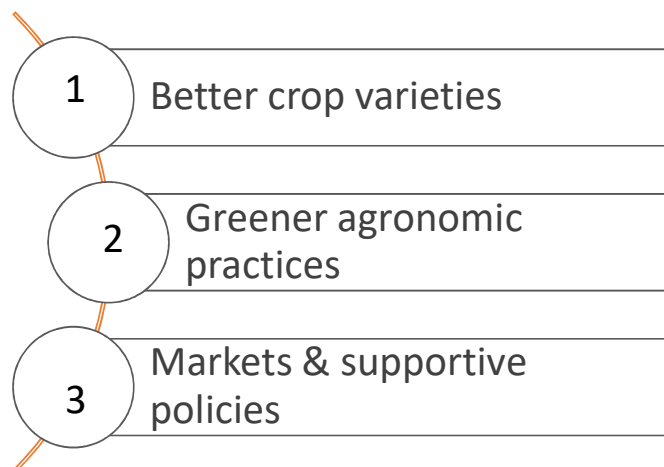


Example: Pakistan

- Reduce area of wheat (1 mil ha) but maintain total production with less water use
- Release land for higher value cash crops
- Challenge for science: increase yields and WUE and NUE

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3 elements of agricultural innovation

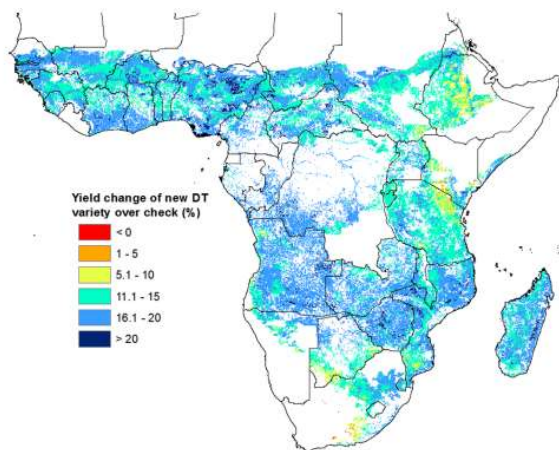


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Solutions for greener agri-food systems

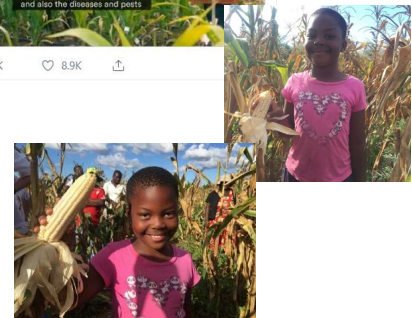
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Solution: Drought-tolerant varieties



Today: 3.5 m ha using DT maize
(out of 35 m ha)

Model: DSSAT DT variety CIMMYT CZH0616



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Challenge: NUTRIENTS

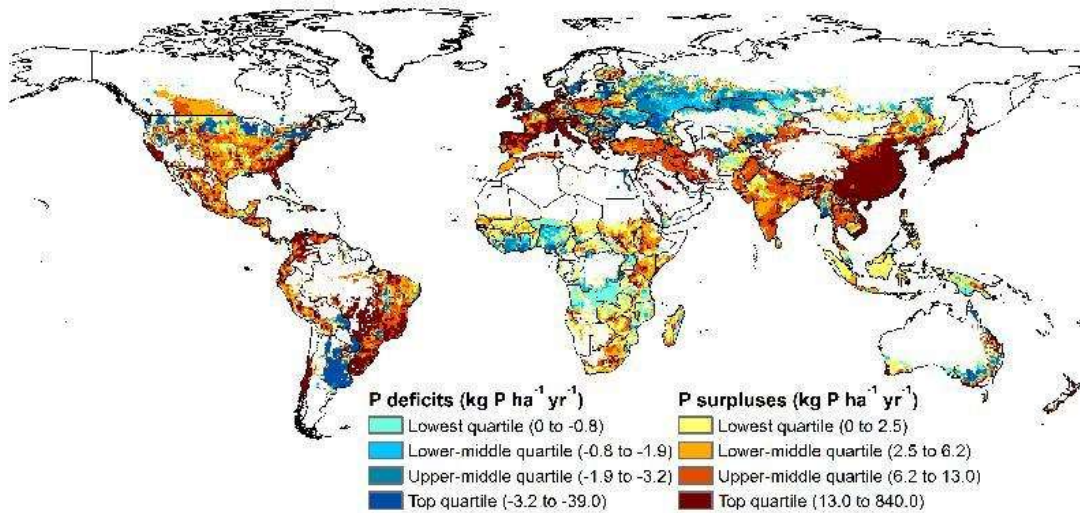
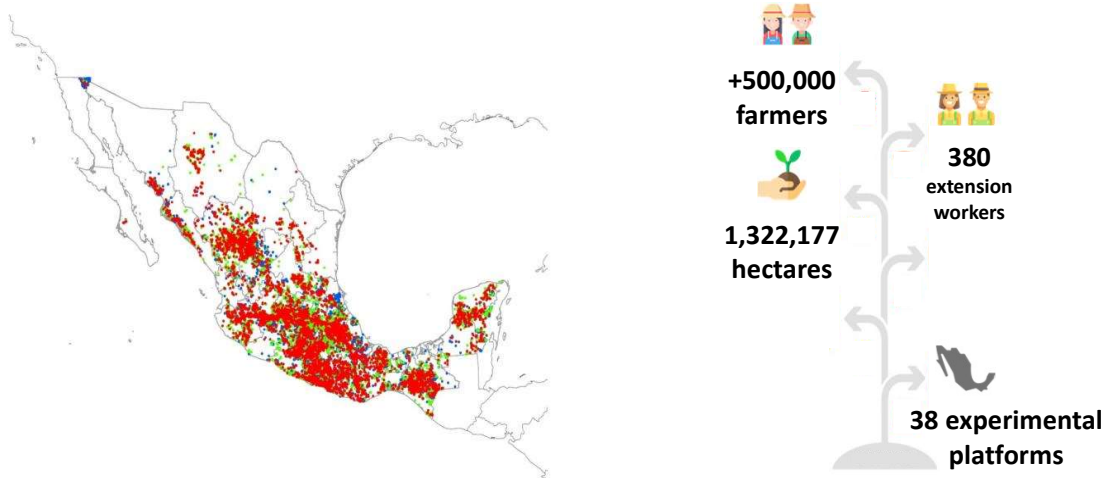


Image: McGill, G. K. MacDonald, E. M. Bennett, P. A. Potter, N. Ramankutty

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Example: Supplying leading food-processing companies with sustainably produced maize & wheat

MasAgro project



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