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The use of sentinel imagery for analysing weather related risk impacts on agriculture

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Risk management is becoming increasingly important for European farmers. Greater market orientation of the European Union's Common Agricultural Policy (CAP) has led to more exposure to market risks. In addition to increased price volatility, the growing number of unusual weather events makes farming an even riskier business these days. A full understanding of the risks and means to reduce them can only emerge from crossing the old-established industry of agriculture with the latest service that big data analysis can offer. Satellite imagery may further boost this recent data-driven business.

Current data driven models have predominantly concentrated on dealing with impacts on yields at the regional scale, whereas damages are expressed in yield loss at the field scale. A lot of data are available on the input side to include soil and weather, but very few on the output side, namely yield and quality at the field scale. A new era of satellite remote sensing and sensor technology has already offered a paradigm shift towards data rich environments with unprecedented possibilities to monitor crop status at higher spatial, temporal and spectral resolutions. Combining crop modelling and statistical analysis with monitoring from remote sensing presents new business opportunities to deliver risk assessments to the insurance industry supporting farmers that are faced with ever more increasing unusual weather events.

Examples will be drawn from different risk assessments of common arable crop production stemming from different Flemish, Belgian and European projects.

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