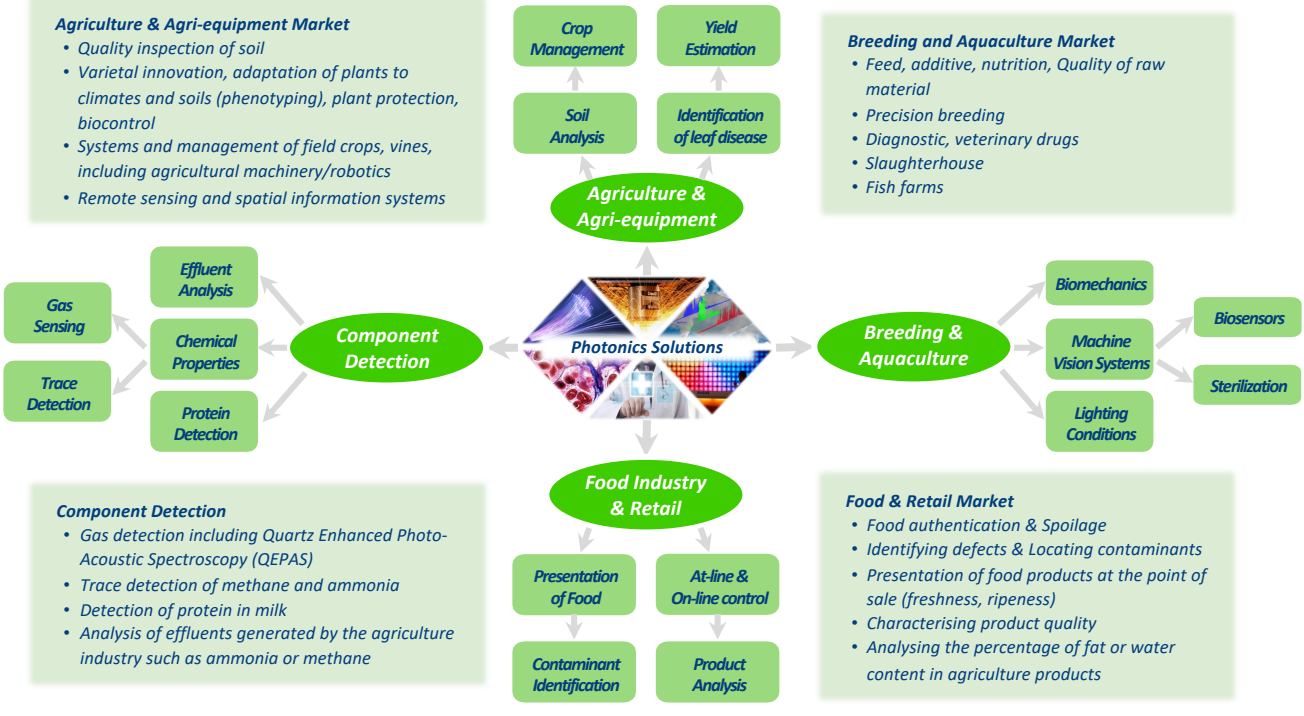
Photonics for Precision Agriculture

Application Case Study

Precision agriculture brings together information from field, animal and machinery based sensors, together with localised weather forecast data, localised soil information and grass growth data gleaned from satellite imagery to assist farmers in making precise decisions in relation to inputs, technologies and management practices. Thus Precision Agriculture, by enabling better targeting of inputs and resources, can increase both a farmer's bottom line and improve the environment.



Innovation Voucher Case Study: *Development of In-Depth Processing and Analysis of Herd*

StrongBó, a real-time livestock data company approached CAPPA to assist them in the development of their new system. The products developed by the company measure a number of significant parameters on individual animals in the herd. The animals' weight is measured each time it attends a trough for water. The work undertaken included an automated data-cleaning algorithm. This was able to deal with scenarios such as where more than one animal was on the instrument. In addition to this interpolation was applied to deal with missing data. All data went through a time series-smoothing model to evaluate the overall trend of each animal over time. This was then used to calculate the water consumed by each animal per day, predict the animals' weight and to evaluate the growth rate of the animal at the resolution of a single day. The research allowed StrongBó to manage a massive amount of data and keep the system live.

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