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Demonstrating the Potential of EO for the Agro-Insurance Sector

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Agriculture provides essential social benefits: supply of food and commodities, economic development and employment. However, agriculture is under growing pressure, arising from soil degradation, water scarcity, natural hazards and weather extremes due to changes in climate patterns. Agricultural insurance is gaining an increasing role as a risk management tool. Given this, the insurance sector has a significant emphasis on identifying, gathering and aggregating historical and current regional and localised data, which could be sourced from remote sensing and earth observation (EO) datasets.

To find out more about the needs and challenges of the agro-insurance's sector and how these might be addressed with current and future EO capabilities, the ESA Earth Observation Best Practice for Agro-Insurance (EO4I) project brings together the EO and agro-insurance sector. The latter is represented by a champion user group comprised of primary insurers as well as reinsurers. The very close and regular contact with those champion users is an outstanding characteristic of this project.

An analysis of the potential customers' requirements revealed a list of more than 60 challenges and needs of the sector, such as the assistance in damage assessments, identification of potential risk effects, estimation of affected area and the extent of damage, or monitoring the crop development throughout the season. These challenges were translated into geo-information requirements for a better analysis of currently available EO capabilities. As could be seen so far, business processes of insurance industry can be supported by numerous remote sensing products and services.

Nevertheless, there is a major gap between the perceived potential and the actual application of available EO capabilities by the agro-insurance sector. The bottleneck is the lack of awareness, understanding and trust in the EO products and services for the agro-insurance sector on both sides, the insurers and their customers. The remote sensing community also often focusses on the possibilities and appropriateness of certain techniques, without considering the impact on the customer value, the productivity and profitability of the industry.

Therefore, EO methods, products and services need to be adaptable to the agro-insurance's

business needs and fit into their daily workflows. The project now builds on the results of this initial requirements analysis to connect EO products with insurance solutions to go from best practice to practice. To demonstrate the potential of EO and cutting-edge technology for the agricultural insurance sector, customised use cases to support loss assessment and monitoring based on artificial intelligence will be developed for selected areas and tested with the available in-situ data.