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BEACON

NEWSLETTER #2

Boosting Agricultural Insurance based on Earth Observation data



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BEACON H2020 Project



Join us and stay informed about the latest project developments!

A BEACON of light to smart Agri-Insurance



Welcome back to our BEACON project newsletter! Newcomers welcome!

Get to know about the history of agricultural insurance, and how risk assessment is implemented in the new CAP. Meet our project partner INOSENS and explore the opportunity to become part of the project Lighthouse Customers group!

Check out our YouTube videos, browse the BEACON project website and follow us on social media to learn more on our projects progress and findings.



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 821964



The history of insurance and the genesis of agricultural insurance

Insurance in some form is as old as historical society. Life insurance mutual funds and maritime transport insurance contracts were the first insurance forms that appeared.

The ancient times....

In its early stages, insurance appeared in the form of "mutual assistance". The pyramid workers in ancient Egypt created the first known "mutual fund" for colleagues suffering from illnesses or accidents. Payments were made in kind (oil, wheat and other food) and the 'mutual fund' additionally provided compensation in the event of death. The Babylonians in turn developed a system of insurance that was used by the first seafarers. If a trader received a loan to finance cargo transportation, he would pay the lender an extra sum to guarantee that he would cancel the loan in case cargo was lost at sea or stolen. In ancient Athens an "interest rate" was applied in nautical loans that varied according to the time of year, that was essentially an intuitive risk-pricing with insurance-like impact.

The middle ages...

The Model of Fundraising Companies are also found in the Middle Ages but maritime insurance is the most important development. Mainly Venetians and Genoese established fundraising companies that would compensate their ships and cargoes against damage. The "Code d'Amalfi" company, was the first to create insurance contracts.

The early modern period...

In Italy, Spain and France archives of the 13th and 14th centuries insurance issues were found on maritime law. In London a special office for the registration of insurances (Office of Assurances) was established in 1575, and in 1601 the first court to settle disputes related to the

insurance of maritime transport was established.

Modern insurance dates back to 1666, when a major fire erupted in London that destroyed 13,200 buildings and led to the first building and housing insurance office. Shortly afterwards, in 1698, the first life insurance company was founded in England. A few years later in the United States, Benjamin Franklin, introduced the concept of prevention by excluding homes for which the risk of fire is too high.



The agricultural insurance market...

Agricultural insurance markets were initiated in Europe over 200 years ago in the form of privately offered protection against livestock mortality and named peril events such as crop-hail. Yet, only in the last 50 years has there been a rapid expansion and development in the range and scope of insurance products offered to producers. Most of this expansion is due to an extensive range of government supports, including subsidized premiums, subsidized delivery and loss adjustment expenses, and the public provision of reinsurance services.



Crop and livestock insurance have a long history in Europe.

Crop-hail insurance was offered in Germany as early as the late-1700s and, by late-19th century, in many European countries. Livestock insurance was offered in Germany in the 1830s. Early insurance schemes were largely provided by small mutual companies offering coverage on single or named perils. Limited attempts to sell multiple peril crop insurance largely ended in failure.

Government involvement in multiple peril crop insurance began in the late-1930s in the United States.

Federal crop insurance was first authorized in 1938 and it was offered on a pilot basis and initially covered only wheat. For its first 40 years, federal crop insurance was offered for a limited number of crops and in a limited number of counties.



County crop programs were often withdrawn if heavy losses were experienced and coverage levels were adjusted to limit loss exposure.

The Federal Crop Insurance Act of 1980 made crop insurance the primary form of catastrophic protection available for producers. The act provided an additional subsidy that

covered up to 30% of the premium costs and put delivery of crop insurance in the hands of private insurance companies to enhance policy sales.



Japan implemented a multiple peril crop insurance program in 1939 that provided nationwide coverage for paddy rice, wheat, barley and mulberries, and subsidized 15% of premium costs.

Canada passed legislation authorizing multiple peril crop insurance in 1959, while after World War II multiple peril crop insurance programs were gradually introduced throughout much of Europe, with subsidized programs implemented in Austria in 1955, Italy in 1970, Spain in 1980, and France in 2005.

Other types of crop insurance Index-based crop insurance linked to weather station or satellite information was not available until the early 2000s, and their introduction was also largely driven by government support in Canada and the United States.

However, more recently, some private companies have begun to offer weather-based products to farmers on a purely private basis, although the extent to which the products will be commercially successful is currently unclear.



Risk assessment in the new CAP

Risk is inherent in the agricultural sector, and farmers have to develop strategies to address higher price volatility, increasing pressure on income and risks stemming from climate change.

Greater market orientation of the Common Agricultural Policy (CAP) led to more

This shift has increased trade opportunities for farmers through the integration of the EU into global markets and reduced the price gap between EU and world market prices over time, leading to impressive gains in the trade performance of the EU agri-food sector. In parallel, the shift away from market management also

uncertainty. Uncertainty about price, and thus income, makes farmers more hesitant in long-term investments that raise productivity. Greater exposure to global markets and emerging new risks such as those linked to climate change (e.g. higher frequency of extreme weather events or disease outbreaks) render the income of farmers more fragile.



We can broadly distinguish between three types of risk that have different causes. Price risks that are due to strong price volatility, uncertainty about future prices and co-movement of prices, driven by an imbalance between demand and supply. Production risks are also faced ought to the possibility that yields and/or outputs are lower than expected. Finally, income risks may occur because of an imbalance between revenue and costs.

exposure to market risks and expectations that risk management should become more important in the CAP.

In its recent history, the CAP has undergone several reforms towards greater market orientation, shifting from production support to mainly decoupled payments and less public intervention.

made farmers more exposed to the risks in the agricultural sector, whether on the internal market because of lower support prices or in global markets due to higher price volatility.

Due to external factors that influence the yield and price of agricultural output, farmers in particular are exposed to increased

These types of risk should be addressed dependent on the frequency of the risk events occurring and the impact of the event on farm income. The combination of frequency and impact of the risky event determines to a large extent the response to it.



Risks are categorized in normal risks (frequent but low damage events), marketable or insurable risks (less frequent but leading to higher losses), catastrophic or systemic risks (infrequent but of large damage to many farmers).

Risk management instruments supported by the CAP up to 2013 were not very successful. Volatility was already an issue when the last CAP reform was being negotiated. In response, the Commission proposed to enlarge the scope for member state support for risk management tools by introducing a 'risk management tool-kit' as one of the possible options to be included in Rural Development Programmes funded under the CAP Pillar 2.

The current CAP proposes a quite detailed system for managing risks, addressing all risk layers (normal, marketable and catastrophic) through a set of tools, complemented by a number of private and national tools (i.e. for catastrophic risks that can lead to very high costs, too costly for private companies to provide instruments to cover these losses).

The main private risk management tools include (i) Non-subsidised insurance or mutual funds, (ii) Forward

contracts and (iii) Futures markets. Considering the challenges for private insurance schemes, agricultural insurance is largely supported by the public sector. This support takes the form of national or CAP subsidies to render insurance premiums affordable to farmers.

However, uptake of a number of tools remains low, in particular with regard to marketable tools (futures, insurance, mutual funds and Income stabilisation tool).

The new REGULATION Proposal for establishing rules on CAP Strategic Plans, was published in June 2018.



Following the risk management perspective, it is noted that although farmers are ultimately responsible for designing their on-farm strategies, a robust framework should be set up to ensure appropriate risk management. To this aim,

Member States and farmers may be able to draw on a Union-level platform on risk management for capacity-building in order to provide farmers with adequate financial instruments for investments and access to working capital, training, knowledge transfer and advice. In the light of the need to ensure appropriate risk management tools, insurance premia and mutual funds should be maintained, financed by the EAFRD.

The category of mutual funds encompasses both those linked to production losses, and the general and sector-specific income stabilisation tools, linked to income losses.

BEACON is indeed attempting to address these risks and redefine Agriculture Insurance tools to enable insurance companies to alleviate the effect of weather uncertainty when estimating risk for Agricultural Insurance products.



BEACON lighthouse customers

Along with BEACON project a selected group of Insurance and Agricultural Insurance sector “lighthouse customers” is growing.

The enlightened innovators in agri-insurance

They are leading companies of the sector that will be the first to have the opportunity to pilot test the BEACON tool and services in their operational environment.

The BEACON lighthouse customers newcomers are:

Lighthouse Customer #3
MICROINSURANCE
CATASTROPHE
Barbados

BEACON Lighthouse Customers - Building for the industry with the industry



Lighthouse Customer #3: Microinsurance Catastrophe

Microinsurance Catastrophe Risk Organisation – MiCRO is a reinsurer specialized in design and implementation of innovative, holistic, affordable, appealing and sustainable risk management solutions against natural disasters for those who need them the most. As such, MiCRO is bridging the divide between the world’s insurance markets and the vulnerable population to strengthen their resilience and competitiveness, and to improve their livelihood conditions.

MiCRO’s initial products are index-based and cover productive activity interruption against the occurrence of selected natural hazards; additional perils and lines of business will follow in the future. MiCRO’s solutions were initially piloted in Guatemala and El Salvador, will soon be available in Colombia, and in additional countries as MiCRO progresses with its regional expansion.

MiCRO is very proud to collaborate with BEACON redefining agri-insurance with innovation and making use of cutting-edge technologies to reduce the protection gap in rural areas.

Please find more about MiCRO following this link: www.microrisk.org



BEACON Lighthouse Customers - Building for the industry with the industry



Lighthouse Customer #4: INTERAMERICAN, Greece

INTERAMERICAN is a leading insurance company in Greece, operating all insurance business lines and engaging more than 1M individual and corporate customers.

INTERAMERICAN belongs to the ACHMEA Group, a leading international insurer with more that 200 years of experience.

BEACON is very proud to collaborate with **INTERAMERICAN** redefining agri-insurance with innovation and making use of cutting-edge technologies to design more accurate and personalized contracts.

Please find more about INTERAMERICAN following this link: www.interamerican.gr/



Lighthouse Customer #4
INTERAMERICAN
Greece



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The BEACON advisory board



The BEACON project Advisory Board consists of individual high level external experts.

They will steer the project activities and provide recommendations on the project development.

- Associate Professor with the Geo-Information Science and Remote Sensing Lab at Wageningen University

Dr. Ioannis N. Athanasiadis



- Full Professor & Head of the Institute of Surveying, Remote Sensing and Land Information (IVFL) of BOKU University

Dr. Clement Atzberger



- Owner and Managing Director of Genillard & Co. GmbH

Mr. Christopher Genillard



- Co-founder of the B3i - Blockchain Insurance

Mr. Paul Meeusen



- Vice president with Guy Carpenter's Asia Pacific team

Ms. Shilpa Pankaj



- Earth Observation expert - index insurance specialist at EARS/eLEAF

Mrs. Eleni Vakaki



BEACON's corner



An interview with Maja Budimir, the Project Manager of INOSENS (WP6 leader) took place Early in December

🕒 What are lighthouse customers and why are they important to the project?

BEACON Lighthouse Customers (LHCs) are agri-insurance supply chain actors such as: agri-insurance companies, reinsurance companies, underwriting agencies, brokers, etc. in a word - all future BEACON Toolbox customers. Therefore, to generate real business and commercial value of the BEACON Toolbox, BEACON placed the co-creation process with future customers into the core of development process of the solution.

By combining the approach of User Centred Design, the Lean Start-Up Methodology and minimal viable product, BEACON allows the development of the Toolbox in iterative cycles, with BEACON Lighthouse Customers providing feedback, within each cycle.

🕒 How do you expect them to contribute to the project?

Based on the above mentioned, the implementation of such a dynamic co-creation process ensures the best market fit, applicability and sustainability of BEACON Toolbox. Moreover, such collaboration with

future customers (LHCs) represents an excellent way to discover all agri-insurance market opportunities, push product branding in all possible directions, and establish a presence in the whole agri-insurance sector.

🕒 How many lighthouse customers are taking part in the project so far?

So far, through the BEACON business modelling activities, InoSens involved 6 LHCs.

In total, BEACON LHCs group has 19 LHCs involved.

🕒 Have you managed so far to record real-life success stories of the Lighthouse customers?

Yes! As part of BEACON Growth Hacking activities, real-life success stories of our Lighthouse Customers are planned to be recorded from the BEACON proposal stage. These stories will serve to attract more targeted players into LHCs group, based on the positive examples presented. Still, throughout the business modelling activities, opportunities like meetings with LHCs, interview and in-person communication in general are perceived as

very valuable sources for BEACON Market Analysis, Market Outreach as well as the creation of good relationship with target future customers. In this way, besides the relevant Growth Hacking material presented on the BEACON Content Hub, BEACON Market Analysis records deeper insights, market requirements and all specific needs of our LHCs.



Can other stakeholder groups provide input to the project?

From the perspective of BEACON Toolbox commercialization, the main group of LHCs are the agri-insurance companies. Still, other stakeholders can provide the input for the project as well. Especially when such stakeholders are providing the wider range of agri-insurance services or have the workflow very similar to the one of an agri-insurance company. For example, in November 2019,

InoSens involved Agrisk, an agri-insurance broker company from Hungary, into the BEACON LHCs group. The company, besides the brokerage business, provides some damage assessment services to its clients. Thus, they will be very interested into BEACON project, and currently, we are exploring the possibilities for their contribution through the provision of input related to damages.

Is BEACON preparing some sort of event to interact with agricultural stakeholders?

Yes! On the 12th of February 2020, in Thessaloniki, Greece, BEACON project is going to organize the AgrInsurance Meetup 2020. The event will bring together actors from the Agricultural Insurance sector around the globe, who believe that this sector could be radically transformed and move towards a new era through the use of cutting-edge technologies like IoT, Blockchain and Big Data. Moreover, the Meetup will analyze how high-tech solutions could enhance the current operational and

business agri-insurance workflows, boosting the company's productivity as well as enhancing customer's satisfaction. All the agri-insurance actors are invited to actively participate in the Meetup by sharing business aspects of their existing workflows and by providing recommendations on how the adoption of these new technologies could be strengthened and lead to a viable growth model. In addition, many of BEACON the LHCs will participate as well.

The BEACON Videos

The BEACON project has produced so far four videos presenting the project and its activities. Check them out on the [BEACON YouTube Channel](#)



BEACON Business Modeling



BEACON Targeting – Persona

BEACON Lighthouse Customer - TRIGLAV - Interview



BEACON EU project presentation



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Upcoming Events



Agri 2020 "Global Conference on Agriculture & Horticulture"

AGRI 2020 takes the opportunity to transfer knowledge from research to industry and transfigure food safety for secured and a healthy future. Magnus Group organizes the "Global Conference on Agriculture and Horticulture" AGRI 2020 scheduled on 10-12/9/2020 in Paris, France. AGRI 2020 conference brings researchers, practitioners, entrepreneurs, and policy makers together on a common platform to discuss current and future aspects of digital agriculture and smart solutions for future farming.

[more info](#) 



5th International Conference "Agricultural Insurance, Reinsurance & Brokerage in CIS, Europe & Asia"

The AgroInsurance Team is holding an International Conference on "Agricultural Insurance, Reinsurance and Brokerage in CIS, Europe & Asia" on April 27-29, 2020 in Tbilisi, Georgia.

The Conference thematic sessions will focus on technical aspects of agricultural insurance, industry innovations, application of remote sensing data and development and administration of insurance products.

[more info](#) 



Farm & Food 2020

The Farm & Food 4.0 – International Congress for Innovation and Digitalization in AgriFood will be held in Berlin on 20/01/2020. Since 2016, more than 400 decision-makers from agribusiness, food industry, start-ups, science and politics have come together in Berlin every year to develop solutions for a sustainable AgriFood system. Farm & Food's mission is to identify the role of emerging technologies in building a productive and sustainable value network that delivers healthy and environmentally sound food for today's consumers and future generations.

[more info](#) 



BEACON was presented in the frames of a series of relative events

- **India Agriculture Conference Rendezvous 2019, New Delhi 15-17/9/2019:** Machi Simeonidou from AgroAppsPC, presented BEACON project in the "Technology – Key for Successful Implementation of PMFBY".
- **φ-Week organised by the European Space Agency, Rome 9-13/9/2019:** George Voutsinos from Karavias underwriting & Manos Lekakis from AgroAppsPC presented BEACON as a means to redefine Agricultural Insurance using EO.

- **Decentralised Insurance Conference, Malta 6/11/2019:** AgroApps in collaboration with Etherisc (organisers of the conference) presented in the conference the BEACON solution and especially its technical aspects.
- **"SCERIN-7 Capacity Building Workshop on Earth System Observations: Land Cover Dynamics in the Agricultural and Protected Natural Areas in the SCERIN Domain", Belgrade 12/6/2019:** Dragutin Protic our BEACON partner from the University of Belgrade (FCE), presented among other our aspiration to redefine the agricultural insurance sector.



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BEACON poll #1 results

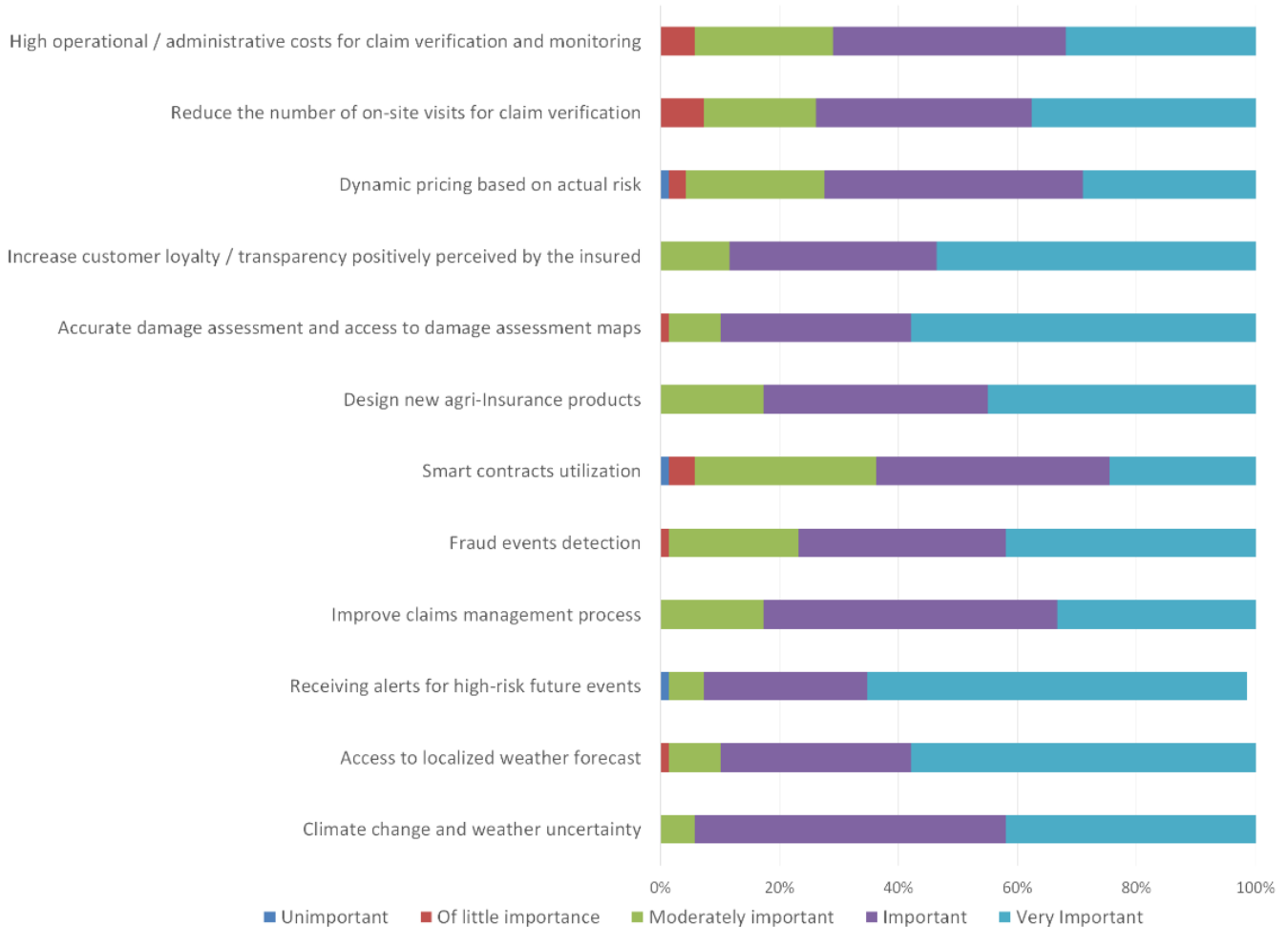


A couple of months ago, BEACON poll raised the following question through its social media

“How would you rate the challenges of Agricultural Insurance?”

The participants of the poll rated as the most important challenge to “Receive alerts for high-risk future events” followed by their need to “Access localized weather forecast” and receive “Accurate damage assessment and access to damage assessment maps”. It is impressive to note that all twelve issues raised by the poll, were considered at least moderately important by the participants.

BEACON poll results in regard of the challenges of agricultural insurance



Project Partners



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