D7.5: Agricultural Insurance Enablers – Advisory Board report (2)

WP7 – Dissemination, Communication and Diffusion

Author: Maroulla Schiza, ETAM SA

Disclaimer

Any dissemination of results reflects only the author's view and the European Commission is not responsible for any use that may be made of the information it contains.

Copyright message

Document Information

Grant Agreement Number	821964	Acronym	BEACON	
Full Title	Boosting Agricultural Insurance based on Earth Observation			
Horizon 2020 Call	H2020-SPACE-2018			
Type of Action	IA			
Start Date	01/01/2019	Duration (in months)	37	
EU Project Officer	Iulia SIMION			
Deliverable	D7.5: Agricultural Insurance Enablers – Advisory Board report (2)			
Work Package	WP7 – Dissemination, Communication and Diffusion			
Date of Delivery	Contractual	M17	Actual	M17
Nature	R – Report	Dissemination Level	PU – Public	
Lead Beneficiary	ETAM			
Lead Author	Maroulla Schiza	Organization	ETAM	
Other authors	-			
Reviewer(s)	KARAVIAS			

Document History

Version	Issue Date	Stage	Changes	Contributor
1.0	13/4/2020	Draft version		ETAM
2.0	30/5/2020	Draft version	Comments from KARAVIAS	KARAVIAS
3.0	31/5/2020	Final version	Incorporation of comments, finalization of document	ETAM

Table of Contents

List of Acronyms

Acronyms	Explanation
AB	Advisory Board
AgI	Agricultural Insurance
EO	Earth Observation
EU	European Union
ICT	Information and Communication Technology
UA	Underwriting Agency
WP	Work Package

Executive summary

The current Deliverable 7.5: "Agricultural Insurance Enablers (2)" Advisory Board report, provides an update of the establishment of the BEACON Advisory Board (AB) and presents the main discussion points and feedback received during the 2nd BEACON Agricultural Insurance (AgI) Enablers - individual members - meeting. It is the second of the four relevant deliverables that will subsequently be developed within the project timeline.

The document is structured in 4 chapters. Chapter 1 presents an overview of the AgI Enablers, their role within the project and their selection process. In Chapter 2 the new members of the BEACON AgI Enablers group are presented. Detailed minutes of the meetings held during this second itineration period (M6 - M16) are presented in Chapter 3, as well as an analysis of the recommendations of the AgI Enablers members on the issues discussed regarding the BEACON project. The final Chapter of this deliverable presents the next steps for the full elaboration of the AgI Enablers group, planned for the next reporting period (M17-M24).

All the activity related to the BEACON AgI Enablers – Advisory Board within the project duration, falls under the implementation of WP7 – Dissemination, Communication and Diffusion, led by the project partner ETAM SA, and relative Deliverables (D7.4-7.7). The current deliverable D7.5 AgI Enablers -Advisory Board report (2) is the second deliverable and highlights the AgI Enablers establishment. The first deliverable was submitted in Month 5 (May 2019). The remaining two deliverables will be submitted on M25 (January 2021) and M37 (January 2022) respectively.

Introduction

BEACON Advisory Board "Agricultural Insurance Enablers" is a multi-actor group of stakeholders of high expertise in policy, regulatory, technical, scientific, commercial, as well as socio-economic aspects of the project. The AB's goal is not only to disseminate the project results. It also aims at establishing synergies towards an AgI enabled environment as well as discussing challenges and opportunities arising in the Agricultural Insurance market.

Upon formation, the members of the BEACON Advisory Board participate in workshops and conference calls, in which they review the project activities and outcomes, identify the strong/weak points with respect to the objectives and implementation of the project as well as the quality of results, and provide recommendations.

1. The role of BEACON Advisory Board "Agricultural Insurance Enablers"

The BEACON AgI Enablers is an advisory body of external experts. The AgI Enablers AB aims at providing advice and guidance throughout the project's timeline in order to support the development of the project and ensure results of high quality.

The AgI Enablers members role includes:

- Participation in at least one conference call per year (upon request of the project).
- Provide ad-hoc feedback when requested by the project consortium (or the project officer).
- Provide written feedback and advice to beacon partners on the quality of the results achieved throughout the implementation of the beacon project.
- Review of project deliverables and identify strengths and weaknesses with respect to the objectives of the project and the intended impact.

At the same time, the AgI Enablers group will be exploited as a high-end dissemination channel for the diffusion of BEACON advancements and outcomes, multiplying networks of different segments for the BEACON market exploitation and also supporting active engagement in the project activities.

2. The AgI Enablers selection process

This deliverable describes the second iteration stage for inviting new potential members to participate in the AgI Enablers group.

The identification and selection followed the open and transparent process with the active involvement of all consortium members as it was carried out in the previous reporting period (M1-M6). The expertise of the potential members was considered on the basis of the main concepts/sectors upon which BEACON is realized and specifically individuals of high level expertise from Agricultural Insurance, Earth Observation, Risk Management analysis, Agricultural Industry, Farming community, as well as International Organizations.

Following the initial – starting phase, when it was proposed that 4 experts will be invited to become members of the AgI Enablers group with the focus being to identify user requirements, it was decided to enrich the AB with 2 additional members. The need came up as it was deemed necessary to enrich the scientific background of the Advisory Board with experts on data science and agricultural insurance specialists to ensure the holistic scientific support of the project (pilot and BEACON tool) implementation phase.

The Invitation Letter (ANNEX I) along with a short summary (one pager- ANNEX II) introducing the BEACON project that was prepared in the beginning of the project was sent to approved candidate members.

Upon acceptance of the invitation, a structured teleconference was organized. The purpose of the teleconference was to:

- ⊘ outline the main activities of the project and the role and tasks of the AgI Enablers members and
- ⊘ to initiate an interactive discussion with the member on the project activities.

3. Members of the BEACON AgI Enablers

As described in the first deliverable (D 7.4) the first four (4) members of the BEACON Agi Enablers group were chosen by Month 5. Specifically, this group of multidisciplinary individuals of high expertise and scientific background were the following:

 Dr. Clement Atzberger is Full Professor and Head of the Institute of Surveying, Remote Sensing and Land Information (IVFL) of BOKU University in Vienna and an expert for proper RS data pre-processing and time series analysis.

 Mr. Christopher Genillard is owner and Managing Director of Genillard & Co. GmbH, focusing on building and establishing innovative new business models and insurance products

 Mr. Paul Meeusen is a specialist provider of treasury, cash management and financial planning software and Blockchain. He is a Strategic Consultant to the B3i Board - Blockchain Insurance Industry Initiative

 Mrs. Eleni Vakaki is an Earth Observation expert - index insurance specialist at EARS/eLEAF a remote sensing company in Netherlands, with expertise in agriculture and water management.

Following the process described in Chapter 1, in this phase of the project (2nd iteration for the establishment of the Advisory Board), two (2) additional experts were invited to join BEACON AgI Enablers. Both of them accepted the invitation and structured teleconferences were organized to initiate interaction.

The new 2 members of the BEACON Agi Enablers group are presented below.

 Dr. Ioannis N. Athanasiadis is an Associate Professor with the Geo-Information Science and Remote Sensing Lab at Wageningen University, in the Netherlands. His research focus is on the enabling role of information for investigating nature, and data science applications in the green life sciences. His expertise lies with data science, artificial intelligence, and machine learning, intelligent information systems, agent-based modelling, geo-information science, knowledge engineering, metadata and ontologies. At Wageningen University he coordinates the Data Science Minor, supervises one post-

doc and six PhD students, and is the principal investigator for two major European grants on big data for data-driven agriculture.

<u>Ms. Shilpa Pankaj</u> is Vice president with Guy Carpenter's Asia Pacific team based out of London and has been in the re-insurance industry for 9 years. She started her career with Marsh India where she was taken on board to set up the first Micro Re-Insurance practice. During this time, she worked on servicing and placing Health, Personal Accident & Agriculture insurance schemes run by the Indian government on facultative basis. She moved to Guy Carpenter London in March 2013 as a broker for the Non-Marine treaty business and is part of the agriculture specialty practice at GC. She has worked briefly in Singapore and Malaysia for some regional renewals. Shilpa has years of experience in dealing with insurance and reinsurance companies engaged in agriculture re-insurance business across Asia and Europe. She has an MBA in Marketing & Finance from Symbiosis International University and holds double graduate degrees, Bachelor of Arts and Bachelor of Business Administration in Banking & Finance. She is an Associate in Reinsurance (ARe), a DipCII and a Licentiate from Insurance Institute of India.

4. Meetings overview

Having proceeded with the identification of the new experts and received their acceptance to participate in the AgI Enablers group, two teleconferences took place. The aim of the calls was to provide the members with an overview of the BEACON project, to introduce them to their role as members of the AgI Enablers group, as well as to initiate a dynamic interaction on the challenges of the project and receive some initial exerts recommendations for the project's implementation. The teleconferences were held via an online collaboration tool. The structure of the call was the following:

- Welcoming; brief self-presentation of the participants.
- Presentation of the BEACON project (overview, challenges, concept, services and expected results).
- Presentation of the AgI Enablers role and activities.
- Interactive discussion (Q&A).

Several interesting comments as well as and useful recommendations were provided by the AgI Enablers members which are summarized in the following sections.

4.1 Interview with Ms. Shilpa Pankaj

The teleconference with Ms. Shilpa Pankaj took place on the 9th of September 2019. From the BEACON project Mr. Dimitrios Petalios hosted the call which approximately lasted 45 minutes.

The main points of the interview with Ms. Shilpa Pankaj are presented below:

- ***What are the main challenges that Agricultural Insurance (AgI) face dealing with the provision of services in the AgI sector? Regarding the monitoring of AgI contracts?***

One of the biggest challenges that the sector faces now is the quantification of climate change, because its impacts is being felt more fairly recent and kind of makes the historical data irrelevant or not completely relevant. This is because climate change is really dynamic in some parts of the world. For example, in some cases we have seen the historical data relate mainly to losses due to drought in the past but are now being impacted by frost. With such local drastic changes in the weather patterns, the cropping patterns have also changed a lot. The farmers also are changing the crop types due to the weather changes, and then the historical data are becoming less relevant. Another challenge could be seen at the claim side. The cost of claims management and monitoring is quite high. To decrease that, we need adoption of technology. But technology comes at a price and also with the challenge of business risks. Finding a right balance between these two challenges will be very important so as to provide efficient AgI services.

⊘ *How familiar are AgI companies with digital tools for the provision of AgI services?*

Familiarity of AgI companies with digital tools varies a lot from region to region and country to country (on whom actually you are partnering with). Europe, US, Canada are more mature and advanced as well as some Asian countries like India and China. But, still there are challenges in many of the regions. There are some countries where the government heavily invested, not just by subsidies, but also in the form of technological support and in those cases there is better adoption of technologies and hence the insurance companies are more comfortable in bringing technological advances into their services to mitigate agricultural risk. On the other hand there are certain countries where the quality of data and the use of technologies, are still not in line with international standards, and this makes very difficult to have the right amount of data or access that will allow the use of different technologies.

⊘ *How would you consider new technology such as EO and Blockchain can support the development of more accurate and cost-effective services for the AgI sector?*

One of the main challenges of blockchain, is that it needs to have all the partners in the chain equally adaptive of the technology. Especially when it comes to the agricultural sector, we do not have the same level of technological literacy at all levels to adopt this technology which might be a limiting factor.

⊘ *What could be the potential of the BEACON toolbox, in supporting AgI companies in overcoming shortcomings/difficulties in providing AgI tools/services?*

(see next question)

⊘ *Do you consider that the BEACON toolbox could improve the operational procedures for AgI companies (increasing the efficiency and transparency and reducing the cost, etc.)?*

(both questions 4&5 replied here)

The option to have an integrated tool available will certainly help to erase out inefficiencies in the system and eventually reduce the cost while improving operational efficiency of the AgI companies. This can then lead to more adoption. Such an approach will also help in making things more transparent within the whole sector.

⊘ *What kind of barriers you would consider that might be encountered by AgI companies using the BEACON toolbox?*

As mentioned previously, for products like BEACON that relate to index-based insurance and depending on remote data, the biggest challenge is the basis risk. There will still be the need for ground inspection necessary to reach a high level of accuracy. In the case of losses for example, which will add an operational cost. Need for better quality data that can be used for index-based products, will also entail further operational costs and be a challenge as such. We shall also consider the readiness level of the different stakeholder in the value chain, to adopt such technologies. With the dramatically changing weather and claims pattern, it is imperative that we adopt not just probabilistic but more sophisticated predictive technologies that can talk amongst themselves to help prepare the farming community and their support system better for the uncertainties in the future. I hope that the BEACON project is able to find a solution to assist in that process.

4.2   Interview with Dr. Ioannis Athanasiadis

The teleconference with Dr. Ioannis Athanasiadis took place on the 3rd of October 2019. From the BEACON project Ifigeneia Tsioutsia from AGRO APPS and Manolis Tsantakis from ETAM SA hosted the call which approximately lasted 50 minutes.

The main topics discussed are presented in the following:

⊘   *What are the main shortcomings that Agricultural Insurance (AgI) companies face dealing with the provision of services in the AgI sector?*

I feel that Agricultural Insurance (AgI) companies haven't differentiated their products to provide custom services that fit regional, farmer and crop type needs. This is at least the case in Greece. Services in the AgI sector can offer a significant variety. Similar to car insurance, where insurance policies are dependent on the experience of the driver, or the area the driver gets about, agricultural insurance services provided could accordingly differentiate.

⊘   *How can satellite data help in the provision of AgI services?*

Satellite data can be useful in the provision of evidence for the certification of various claims. This means the AgI companies would either not need experts to perform inspections or minimize their on-site involvement, since unlike a traffic accident - in the case of car insurance-, many parameters (not all) can be verified using satellite data. Additionally, satellite data could also be used to differentiate insurance products by using forecasting models for the potential of each different agricultural production when combined with meteorological data and / or data from previous years.

⊘   *What are the challenges for EO Service Providers in the development of services for the Agriculture insurance sector?*

The main challenge is that the data needed from AgI companies to create new products and services (e.g. crop monitoring or canopy change) are not accessible. On the other hand, expert companies that collect satellite data, cannot identify how these data can be useful to the AgI sector and what is needed to turn them into a product. It is thus necessary to establish a collaboration between the AgI companies and EO Experts in order to translate what we see from satellites into something useful for agricultural insurance. This is an innovative concept and there are various startups that have identified a niche market on how satellite data can be used for market forecasts, agricultural insurance etc. Nonetheless there is a silo of knowledge, as the knowledge of the scientific community about crop monitoring and remote sensing is not readily available or utilized by insurance organizations, financial services, management administration etc. There is therefore a gap of knowledge on how these data can be implemented within products, policy making or other purposes.

⊘ *What degree of accuracy do you believe can be achieved with EO services?*

In a recent study for monthly crop forecasting systems that has been running at a European level over the last 30 years, estimated error has been calculated between 5-10% (at a regional level). Another recent paper on the accuracy prediction of the MARS system yield forecasting reported calculated errors to be between 5-10% at a NUTS II level. In other publications reported errors are more or less in the same levels. Nonetheless these results do not provide sufficient evidence of accuracy at a farm level.

⊘ *Is there room for improvement on EO accuracy levels?*

This is a real scientific question. How do we explain yield variability? Why does one field have a yield of 30% and another 45%? Additional issues related to physical parameters such as the type of soil, genetic parameters, such as the choice of seed and hybrids, as well as management practices can also play a role. These parameters can be monitored by satellites. Therefore, within the equation:

genetics + environment + management = yield

we can only monitor the environment through the satellites.

⊘ *What you think insurance companies should do to make the best use of the combination of the services BEACON offers and their existing workflow?*

A forecast at a field level with a 10-20% error estimate, may limit or offer a better quantification of risks, comparing to forecasts at a Country or Regional level were estimated error is smaller. This is what is interesting in BEACON. It does not only deal with making a good forecast but it also deals with whether that forecast has a business value, i.e. a level a 5-10% error may not be good enough scientifically, but it is good enough for managing risks at a field level.

⊘ *How would you consider new technologies such as EO and Blockchain can support the development of more accurate and cost-effective services for the AgI sector?*

I believe there is an unexplored potential within the agricultural industry. Remote sensing technology has already been uptaken at least much more than Blockchain. The main advantage that blockchain offers and could be exploited in the sector, is the ability to perform contracts or certify data / events in a way that bypasses legal clauses or digital verification. Blockchain is not an ideal tool to store big data or images from remote sensing. Its main potential lies in the area of certification and auditability. That is the ability of evidence proofing specific transactions, peers' activities, availability of files etc. I'm not expecting miracles from blockchain. I expect miracles from remote sensing in the sense that the accuracy of data constantly increases, more precise decisions can be made, and field level can be reached to run models and make predictions. The goal should be to make data more spatially explicit and accurate and make use of them in insurance companies' products. Nonetheless a technology push is not the only action necessary. We need to have a real match with the agricultural insurance industry needs when implementing technological solutions in order to produce competitive products.

⊘ *Are localized weather forecasts a differentiation element and is it technically feasible through the BEACON toolbox considering the technical constraints?*

I think that's the way forward. Without accurate meteorological data locally, it is difficult to make accurate forecasts for production. Local conditions cause great variabilities within fields and cultivations and local knowledge is very important for proper farm management.

⊘ *From a commercial perspective, do you see any countries being more technologically ready to adopt the BEACON solution?*

The structure of rural economies / businesses varies widely from Country to Country and Region to Region in Europe. In a country such as the Netherlands, agricultural businesses are on average larger than those in Greece and they would more easily have the opportunity and the need to invest in insurance products rather than a very small non-entrepreneur farmer in Greece. I expect BEACON to have a resonance in contract farming, where large companies target the production of specific quantities and qualities of agricultural products, and it is therefore necessary to insure their production. I think an idea would be to run a survey amongst your in-market partners and lighthouse partners to identify the potential BEACON customer profiles who would be interested in private insurance plans.

5. AgI Enablers Recommendations

In the following table a summary of recommendations / important aspects highlighted by the AgI Enablers new members, is presented. Their comments are linked to specific WPs and activities within the BEACON project. Relevant recommendations will be considered by the project partners in the realization of the project activities. Should it be considered necessary, additional discussions/meetings might be organized with members of the AgI Enablers and project partners implementing specific activities within which expert recommendations have been provided, to further elaborate points addressed.

Name	Recommendations / Important aspects	BEACON Actions
Dr. Ioannis Athanasiadis	Identify the potential BEACON customer profiles who would be interested in private insurance plans amongst your in-market partners and lighthouse partners.	BEACON is continuously engaging stakeholders from all over the world through the Lighthouse Customers Group. BEACON has included into its LHC Group, members not only for EU in order to explore and identify better the AgI sector's needs and requirements in diverse environments for further sustainability and viability. Additionally, through dissemination tools (i.e. website, social media) BEACON is running surveys / polls looking into the user – potential customer needs. Finally, BEACON is organizing events – workshops (e.g. AgrInsurance Meetup 2020) to encourage the engagement and expression of opinion of the AgI companies' needs. ***Relevant WPs:*** *WP2; WP6, WP7*

Name	Recommendations / Important aspects	BEACON Actions
Ms. Shilpa Pankaj	A limiting factor when it comes to the agricultural sector, is that there is a different level of technological literacy at all levels to adopt this technology.	The BEACON tool was developed along with end users for the users so that it is useful and easy for them to understand, avoiding complex technological processes. To support, the different actors' sizes and requirements in terms of services, BEACON allows the modular provision of its services coupled with a modular pricing. Furthermore, it is available either as SAAS or DAAS, giving users the opportunity to assimilate it into their existing processes. The latter is also supported by the "placement"/ provision of BEACON to our potential customers. The "Go to the market strategy" also examines and evaluates the uptake of ICT by companies and presents integration solutions in different markets. **Relevant WPs:** WP2, WP4, WP6
Dr. Ioannis Athanasiadis	It is necessary to establish a collaboration between the AgI companies and EO experts in order to translate what we see from satellites into something useful for agricultural insurance.	BEACON emphasizes on collaborative development of services in order to produce services that are user friendly. In order to achieve this a co-creation process took place based in user needs and their active involvement. Furthermore, cooperation between AgI companies and EO experts has been established either through the consortium or the AgI Enablers, whilst in accordance to the established BEACON engagement strategy ensuring a dynamic interaction with the BEACON targeted audiences is of outmost importance (D7.1). Amongst the main target groups of the engagement strategy are AgI companies and the EO industry. Additionally, EO experts are considered as possibilities for the enhancement of the AB, to help us further simplify, where necessary, the information provided. *Relevant WPs:* WP2, WP4, WP7

6. Next steps

In the next period of the project (M17-M24) and following the project developments, a webinar is to be planned and organized that aims at providing the project developments on the BEACON toolbox, pilot implementation and initial business models. In the previous AB report (Deliverable 7.4) this webinar was planned for October but as the AB Board had not yet been fully established, it was decided to be carried out during the implementation phase of the project, where preliminary results will be presented to the Board and the experts will be able to provide useful comments and input before the 2nd validation round (M24) of results.

The AgI Enablers members will regularly meet with the project consortium to follow the project developments, review progress of project activities, dynamically interact with the project partners addressing strategic questions and plan for the coming periods. Meetings will be held mainly via teleconferences. Whenever it is essential for the implementation of the project, ad-hoc teleconferences with the AgI Enablers group will be held to discuss on particular issues developed.

In person meetings may potentially be organized, as well as AgI Enablers members may participate in project progress meetings and events. The schedule of BEACON project meetings and relevant events will be shared with the AgI Enablers members and will be further discussed to identify and agree the participation of any members during the project upcoming meetings / events. The BEACON consortium partners have mutually agreed and allocated budget to cover travel expenses (flight and accommodation) for the AgI Enablers members.

Meeting reports, summarizing the overall discussions, conclusions, observations on project results and recommendations on actions for impact creation will be prepared after each meeting with the AgI Enablers members and group. ETAM, being responsible of the implementation of the AgI Enablers related activities (Task 7.3 – Agricultural Insurance Enablers: BEACON Advisory Board), will highlight the conclusions and recommendations to be taken into consideration throughout the decision-making process all along the project life span.

Annex I - AgI Enablers members Invitation Letter

BEACON
Boosting Agricultural Insurance based on Earth Observation data

Follow us on:

Invitation to participate in the BEACON AgI Enablers group

Dear......,

We would like to invite you to become a member of the Agricultural Insurance Enablers group, the BEACON Advisory Board.

The BEACON project (Boosting Agricultural Insurance based on Earth Observation Data) using Earth Observation, weather intelligence and Blockchain technologies, aims to develop a bundle of commercial tools and services empowering Agricultural Insurance underwriting procedures; enabling a more accurate damage assessment and claims adjustment and allow an enhanced – remote and real time monitoring of contracts.

BEACON AgI Enablers is a counselling body consisting of external experts, aiming to provide advice and guidance for the development of the project. The AgI Enablers members will be meeting with the project consortium to follow the project developments, review progress of project activities, dynamically interacting with the project partners addressing strategic questions and provide expert recommendations. The AgI Enablers will be convened some times throughout the duration of the project either in meetings or in conference calls. All travel and accommodation costs will be covered by the project budget.

With your collaboration we will be able to issue recommendations that will ensure the fulfillment of the project's objectives.

We are looking forward to welcoming you as a member of this unique group.

Do not hesitate to contact us for any further information or clarification.

Best regards,
Mr. George Karavias
BEACON project Coordinator
KARAVIAS Underwriting Agency

Project Partners:

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

Annex II - BEACON One pager

The BEACON project aims to develop a bundle of commercial tools and services for the Agricultural Insurance (AgI) companies supporting them to achieve a better risk and damage assessment within their AgI products; enabling them to reduce the number of on-site visits for claims verification and to reduce their overall operational and administrative costs for monitoring and handling AgI contracts; and allowing them to design more accurate and personalized contracts.

BEACON building upon state-of-the-art Earth Observation (EO), weather intelligence, ICT and Blockchain technologies, will provide insurance companies operating (or wishing to operate) in the AgI market, with robust and cost-effective tools and services to overcome several limitations in the AgI market and sector. It will confidently empower AgI underwriting procedures and premium calculations, by providing access to, and analyzing EO, climate and localized meteorological data. Using satellite-based information, coupled with weather intelligence and high-resolution weather forecast it will enable a more accurate damage assessment and claims adjustment along with a potential fraud detection.

Moreover BEACON powered by Blockchain technology, will provide a Smart Contracts service, enabling an automated execution of contract clauses to insured parties, reducing admin costs and burden. An enhanced – remote and in real time contract monitoring will be ensured. An early alert system for potential crop risk, relate to weather conditions, will enable AgI companies to timely inform and advice their customers about all necessary actions to mitigate the impact of in their crops.

For further information contact: info@beacon-h2020.com