Challenge 1

"Smart farming and digital transition: Automation and real-time data"

Recap:

Innovative solutions to improve cultivation and care of tobacco plantations through automation, timely and real-time data collection.

Challenge in detail:

We seek decision-support tools for tobacco cultivation and care, as well as solutions that automate field interventions, optimizing the production and processing process. Our main goal is to increase the efficiency, sustainability and quality of tobacco cultivation.

We are interested in innovative proposals that can contribute to:

- Automation of field operations: We are looking for solutions that employ robotics and technology, including connectability with agricultural machinery, to automate tobacco cultivation and care activities such as planting, irrigation, fertilizer and pesticide application, improving efficiency and reducing resource consumption

- Real-time data collection via IoT sensors, advanced algorithms and artificial intelligence: we seek technologies that leverage smart sensors and IoT devices to monitor real-time conditions of soil, moisture and other critical parameters, as well as tobacco biomass, providing accurate data to make informed crop management decisions and helping farmers reduce wasted resources.

Challenge 2

"Innovation in the circular economy for tobacco production and processing: Process optimization and waste reduction"

Recap:

The circular economy is high on the agenda of the European Commission, aiming to promote circularity in production processes and sustainable consumption in order to reduce waste generation. We are interested in approaches that generate value in a context of recycling, reuse and use of biomaterials and alternative packaging materials.

Challenge in detail:

Nowadays, tobacco production and processing generates waste both during the growing stage and during the processing and packaging processes. This presents an opportunity to optimize processes. We seek solutions that address this issue, optimizing the production process and reducing the amount of waste generated.

We are interested in innovative proposals that can contribute to:

- Innovating materials: we seek solutions that reduce the use of traditional materials in tobacco production and processing, encouraging the adoption of biomaterials and alternative materials with low environmental impact.

- Generate value and promote recycling: We seek solutions to optimize the use of materials during the tobacco production and processing process in order to generate added value and promote reuse and recycling of the materials used. This could include the implementation of internal recycling processes, the valorization of by-products, or the creation of new tobacco-derived products.

Examples of solutions or technologies in line with the research: alternative packaging materials; valorization of by-products; advanced recycling technologies; production process optimization: using artificial intelligence and data analysis to optimize the tobacco production and processing process.

Challenge 3

"Eco-Energy Transition: Reducing Energy Consumption and Carbon Emissions in Tobacco Growing, Harvesting and First Processing"

Recap:

The challenge aims to reduce the energy consumption and carbon emissions associated with the planting, harvesting and initial processing of tobacco. The goal is to find sustainable solutions and innovative technologies to mitigate the environmental impact of the tobacco industry by promoting responsible and climate-friendly production.

Challenge in detail:
The challenge is focused on eco-friendly initiatives and innovative solutions to reduce energy consumption, carbon emissions and promote a more environmentally responsible industry. The goal is to adopt sustainable approaches in line with global sustainability goals.

- Technologies for reducing water/energy consumption: We look for solutions that enable more efficient irrigation and energy management, e.g., soil moisture sensors, monitoring of water and energy use, use of renewable and/or alternative energy sources.

- Low-impact technologies: Invest in research and development of innovative technologies that reduce energy and resource use during tobacco processing.

Challenge 4

"Digital solutions for business analysis and risk management in agriculture"

Recap:

In the agricultural sector, business efficiency and accurate cost management are key to qualitative and economic results. The challenge aims to find digital solutions that simplify business analysis, enabling better planning and timely decision-making based on economic data. The goal is to promote solutions that make cost analysis more efficient and contribute to more informed and profitable business management in the agricultural sector.

Challenge in detail:

The challenge focuses on finding innovative solutions that can help farms analyze economic performance and manage risk more effectively. We seek advanced analytical tools that generate detailed reports and identify key performance indicators. The goal is to assess the business risk associated with agricultural activities, quantify possible losses, create risk mitigation strategies, and find solutions that make cost analysis more efficient and contribute to more informed and profitable business management in the agricultural sector.

We are interested in innovative proposals that can contribute to:

- Support analysis of economic performance: We are looking for solutions that provide advanced analytical tools to assess the economic performance of agricultural activities. These tools should enable the generation of detailed reports, identification of key performance indicators, and comparative analysis of results over time.

- Entrepreneurial risk assessment and predictive analysis: We seek solutions that integrate entrepreneurial risk assessment tools in the agricultural context. These tools should enable assessment of risks associated with agricultural activities, quantification of possible losses, and creation of risk mitigation strategies.

Examples of solutions or technologies in line with the research: digital platforms for business management; sensor and IoT integration to assess business performance; predictive analytics and artificial intelligence; mobile solutions for data collection; etc.

Challenge 5

"Innovation in tobacco storage, quality control and grading"

Recap:

The process of checking, grading and processing tobacco is a key process that significantly impacts product quality and involves both analysis of organoleptic properties and chemical composition.

Challenge in detail:

We seek innovative solutions to optimize the quality control and grading stage, making the process of detecting the organoleptic properties and chemical composition of tobacco more accurate, faster and automated.

We are interested in innovative proposals that can contribute to:

- Improve tobacco quality control and grading: we seek advanced tools and technologies that simplify and automate the process of tobacco quality control and grading. This could include the use of online analysis sensors to assess the organoleptic properties and chemical composition of tobacco in real time.

- Preserving organoleptic properties and chemical composition: We seek solutions to ensure that the organoleptic properties and chemical composition of tobacco are maintained during initial processing and storage. This could include the use of preservation technologies, humidity and storage environment control systems, and the implementation of strict procedures to avoid external contamination due to temperature changes.

- Integration of advanced technologies: we are interested in the application of innovative technologies such as artificial intelligence, robotics,

augmented reality, process control tools, and data management to improve tobacco quality. For example, the use of artificial intelligence could facilitate data analysis and pattern identification for more accurate classification.

Examples of solutions or technologies in line with the research: sensors for analyzing organoleptic and chemical properties; systems for preserving and controlling the storage environment; artificial intelligence for grading tobacco; developing artificial intelligence algorithms to analyze data collected during the quality control and grading process; robotic systems for automating processing and control operations; etc.

Challenge 6

"Exploration of new business opportunities : Diversification of offerings by combining expertise in tobacco with other sectors."

Recap:

Philip Morris Italy is looking for disruptive ideas that can open up complementary new business avenues. The goal is to explore business opportunities that leverage PM Italia's expertise and experience in tobacco and other botanicals, opening new opportunities to be explored.

Challenge in detail:

We look for a disruptive idea with the potential to open up complementary business avenues, combining PM Italy's expertise and experience on tobacco/other botanicals with opportunities for application in other areas yet to be explored.

Examples of solutions or technologies in line with research: biomaterials derived from tobacco or other botanical plants for production of sustainable materials, e.g., for packaging or fashion industry. etc.