

Innovate to develop  
people demand for  
plant-based proteins  
products

EUROPEEN CALL FOR APPLICATIONS

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Lille, February 20th, 2017

**LAUNCH OF THE FIRST EUROPEAN CALL FOR APPLICATIONS  
INNOVATE AROUND PLANT-BASED PROTEINS  
TO HELP FEED THE PLANET**

**Innovate to develop the human consumption of plant-based proteins.  
By 2050, the Earth will have to feed some 9 billion people.  
Global proteins demand is expected to soar 40% as early as 2030.**

**In order to meet related food security, nutritional and environmental challenges in a sustainable way, developing new products, processes or services around plant-based proteins looks critical.**

**First European call for projects to innovate around plant-based proteins**

Village by CA North of France is launching a call for applications *“INNOVATE TO DEVELOP PEOPLE DEMAND FOR PLANT-BASED PROTEINS PRODUCTS”* with its partners Bonduelle, Sodexo, Université Catholique de Lille, La Voix des Médias, Eurasanté and the Nutrition Health Longevity Cluster (NHL). This call for projects, the first of its kind in Europe, is supported by IAR, the Bioeconomy Cluster.

The Village by CA and its partners constitute a powerful ecosystem that brings together and federates, in the Hauts-de-France region, start-ups, industrial players of reference, research and training organizations and potential investors. They help in establishing France as a world leader in plant-based proteins.

**Meet start-ups in Lille on June 14th, 2017**

The call for projects is aimed at start-ups and innovative project leaders throughout Europe.

The objective is for Village by CA North of France to boost the economic development of start-ups that prove innovative, particularly at nutritional, environmental, taste and cultural levels.

The most innovative entrepreneurs will get the chance to grow their start-up within one of the most efficient open innovation ecosystems in France and in Europe, made of Village by CA North of France together with Eurasanté, Nutrition Health Longevity and IAR Clusters.

Selected start-ups will be invited to pitch on June 14th in Lille, during the fifth edition of Nutrevent, a European business convention in which the players of the health nutrition sector converge.

Winning start-ups will benefit from exclusive and personalized support by Village by CA and its partners to boost their project and their “go to market”. Their brand will also benefit from the communication actions of Village by CA North of France and its partners on the European scene.

Village by CA partners will progress on their own open innovation pathway in supporting selected start-ups and hereby developing new business drivers.

In addition, a Students International Innovation Challenge will be launched in April 2017 by the Call for applications partners, in cooperation with Village by CA North of France.

## *A / European call for applications: innovate to develop the human consumption of plant-based proteins*

### 1. Call for applications objectives and challenges

#### **Feed 9 billion people in 2050**

According to estimates, the world population is set to reach 9 billion by 2050. This will mean major nutritional, environmental and food safety challenges.

Proteins are vital for a balanced diet. And the world will need 40% more proteins than we have now by 2030. The environmental cost of producing animal-based proteins is far from negligible – considerably higher than that of producing plant-based proteins: relying essentially on the production of animal-based protein in order to meet this increased need is unsustainable for our planet.

Feeding ourselves in the future will therefore have to involve finding new solutions in order to restore the balance between animal-based proteins and plant-based proteins in what we eat.

The challenge is to innovate and so maintain the rate at which people are starting to adopt plant-based proteins in their diets throughout the world.

The market for plant-based proteins has been growing slowly but steadily over the last 30 years. Its development, however, faces several obstacles, with so many challenges:

#### Nutritional challenge

The quantity of proteins and the various different types contained in the source should ensure that it is possible to meet one's daily nutritional requirements as part of a balanced diet.

#### Environmental challenge

The production of plant-based proteins or their transformation from the field (or the sea) to the plate must generate an environmental footprint that is lower than the footprint generated by the production of animal-based proteins. It should also be less harmful to the planet's biodiversity, promoting the complete use of the original plant as part of a minimalist transformation process.

Technologies for reducing anti-nutritional factors or improving the nutritional quality of plant-based proteins – traditional varietal selection, biotechnologies, processing technologies and inactivation technologies – would be welcome.

#### Taste challenge

The sensorial experience provided by plant-based proteins should be as pleasant as that provided by animal-based proteins – without necessarily being the same. The scope goes well beyond simply imitating meat or developing substitutes for it.

### Repletion challenge

Plant-based proteins should provide the same sensation of repletion as animal-based proteins.

### Cultural challenge

Innovative proteins such as plant-based proteins are unknown to the general public. The reluctance to innovate can also act as a brake on their growth as well as the sometimes obsolete image they benefit from the general public.

Services or ecological or nutritional footprint indicators that help people choose sources which are more balanced in terms of plant-based proteins and which have a smaller ecological footprint are sought.

## 2. Who is the call projects targeting?

The call for applications is aimed to the leaders of projects that are in the maturation stage of their idea as well as to start-ups with less than 3 years of existence who develop innovative products, processes, services or applications that involve plant-based proteins.

Project leaders and start-ups will be selected based on their ability to respond innovatively to the challenges related to the consumption of plant-based proteins: nutritional, environmental, taste, repletion and cultural challenges.

They must be motivated by the desire to develop their business, by integrating the most promising advanced ecosystem in France and Europe, which brings together qualified industrial players, research and training players, potential investors, as well as the two competitive clusters: the Health Nutrition Longevity Cluster and IAR - The Bioeconomy Cluster.

Sources of plant-based proteins can range from proteins which are already widely consumed (dry vegetables, soya, etc.) to alternative forms of protein (algae, micro-organisms, traditional plants, etc.). Preference will be given to those sources which place the emphasis on quality and land.

Indirect consumption of plant-based protein via animal feeds is irrelevant. The same applies to new sources of animal-based proteins, such as insects.

New technologies are encouraged, but not those which involve genetically modifying organisms or genome editing – people would be reluctant to adopt such technologies quickly

### 3. Benefits for the winners

Winning start-ups will benefit from exclusive and personalized support by Village by CA and its partners to boost their project and their “go to market”. Their brand will also benefit from the communication actions of Village by CA North of France and its partners on the European scene.

#### Introduction to their future clients, partners and suppliers:

- The Village by CA – supported by the Eurasanté, NHL and IAR clusters and the rest of the Village's partners – can introduce them to whomever they wish to meet
- Mentoring provided by the Village's partner sponsors
- Active meetings with potential investors and funders

#### Personalised support to get their project off the ground quickly:

- Project structuring (financial, legal, regulatory expertise, etc.)
- Scientific and technical expertise
- Help with experiments and evaluations
- Economic intelligence
- Communications and marketing strategy
- Launch
- International development
- Search for financing
- Support for participating in collaborative projects which in turn give access to French and European funding (FUI, ANR, Horizon 2020, BBI, etc.)

#### Hosting at the Village by CA North of France:

- At the Euratechnologies, Eurasanté or Euralimentaire sites, depending on the project or start-up leader's choice
- For up to 8 months during the incubation period and 24 months during the acceleration period

#### *Start-ups hosted by the Village will get:*

- The Village's and/or Eurasanté's/NHL's event package: conferences, workshops, networking events, HR support, etc.

*If the project leader does not wish to be hosted at the Village, this support will only be provided for three months.*

#### Highlighting and showcasing on the European stage

- Get showcased at Nutrevent, the European business convention, which runs from June 14th to June 15th (workshop and winner promotion event)
- Promotion of winners via the Village's promotional tools and those of partners and the specialised press

#### 4. Schedule

February 27th	Call for applications opens
May 19th	Deadline for submitting applications
May 19th to June 2nd	Start-ups are short-listed
June 2nd	Projects which have been short-listed and selected to be announced
June 14th	Candidates are heard by the panel and winners are announced during Nutrevent, <i>the European business convention where food, nutrition and health innovators converge.</i>

#### 5. NutrEvent

NutrEvent is the first European business convention dedicated to innovation in food, nutrition and health, with more than 600 participants, 50% of which are international (ingredients suppliers, finished products suppliers, research institutes, consulting firms, CMO, CRO, investors) and whose 5th edition will take place in Lille on June 14 and 15. The event will bring together four highlights: B2B meetings, conferences and round tables, exhibitions and presentations of innovations. The opportunity for industry players to promote tomorrow's innovations, meet future business partners or innovators, share and discuss trends in the sector.



*B / Presentation of the Village by CA North of France and the partners of the Call for projects*

The Village by CA North of France



The Village by CA supports young companies with high innovation and development potential from all over France.

Project and start-up leaders hosted by the Village by CA can take advantage of a cutting-edge technological environment right in the heart of the region, and numerous leading private and public partners can be part of the innovation ecosystem.

The Village by CA North of France is based in Lille, right in the centre of Euratechnologies, which is considered one of Europe's leading start-up accelerators, where 145 companies involved in digital technologies, cybersecurity, data and the Internet all operate.

The Village by CA North de France is a unique ecosystem entirely focused on speeding up the development of innovative start-up companies. It does this by providing a forum within which they can meet and work alongside other start-ups, major companies, research and training centres, investors and institutional stakeholders.



## Eurasanté and the Nutrition, Health & Longevity Cluster (NHL)



**eurasanté**  
Invest for Success

Eurasanté is an economic development agency operating in the Biology, Health and Nutrition sectors based in Hauts-de-France. It supports project leaders and companies in the biology, health and nutrition sectors in their various research projects and in their drives to set up companies and develop business. Eurasanté also invests in organising and promoting B2B events focused on innovation and partner-orientated research in key sectors of the healthcare market (Silver Economy, Nutrition, Pharma/Biotech, Medtech). It aims to promote innovation, play a part in structuring these sectors and develop business opportunities on an international scale.



The Nutrition, Health & Longevity Cluster (NHL) is the only competitiveness cluster in France which combines nutrition-related topics with topics related to health and biotechnologies. It specialises in innovations for preventing and treating pathologies associated with the ageing process. It has 120 members and supports innovative stakeholders operating in Nutrition and Health in designing, developing and financing the products and processes of the future. The Cluster sets out to identify opportunities (technology, market, product, financial assistance), facilitate discussions between existing and potential members and contribute to collaborative R&D projects involving universities, academic teams, national and international public research institutes and private companies.

## Bonduelle



Bonduelle is a family-run company founded in 1853 that has set itself the target of being the world's leading company engaged in helping people to live well by eating vegetables. Firmly focused on innovation and long-term vision, the group is diversifying its business lines and increasing the number of regions in which it has sites. Its vegetables, grown over a surface area of 128,000 ha, are sold in 100 countries under various brand names. Various distribution channels and all types of technology are used to market them. Bonduelle operates 55 sites and has acquired unique expertise in the agro-industrial sector. Its products are produced in the best crop-growing regions and the shortest possible distribution channels are used to transport them to customers.

## Sodexo



Sodexo was founded in 1966 by Pierre Bellon in Marseille. It is a world leader in services that improve quality-of-life, contribute to people's well-being and to company performance. It operates in 80 countries and serves 75 million consumers every day via a unique combination of three activities: On-Site Services, Benefits & Rewards Services and Personal & Home Services, delivered by nearly 425,000 employees. Sodexo is the only company to provide a complete range of innovative services, based on more than 100 professions, such as food services, reception, maintenance, cleaning and facilities and equipment management. It also manages luncheon vouchers, gift vouchers, home help services, nurseries and concierge services. The Group celebrated its 50th birthday in 2016.

## Crédit Agricole North of France



Crédit Agricole North of France is a full service community bank, the largest financier in the Hauts-de-France Region, actively supporting the development of its region and the projects of its individual clients, professionals, craftsmen, SMEs and corporations.

The bank has more than one million customers and serves them in all sectors of banking: savings, financing, insurance and real estate. Crédit Agricole North of France contributes to the fundamental issues facing its region and supports it along the demographic and economic transformations in order to prepare for the future. The bank hence supports Village by CA North of France and its network of partners in order to promote the creation of new business start-ups and the emergence of innovative projects.

As a mutual and cooperative bank, Crédit Agricole North of France is a committed partner for the economic development and social development of its region.

## Université Catholique de Lille



The Université Catholique de Lille is a unique multidisciplinary institution comprising of five faculties, schools and institutes and some 28,000 students. It also has a 1,000-bed hospital.

All of these institutions share the same educational philosophy based on excellence and humanism, performance and solidarity serving the region and helping to preserve it. Over the past 5 years, the Université Catholique has been committed to a unique innovation approach. This has involved numerous innovative ecosystems, including the Yncréa Hauts-de-France ADICODE system and its commitment to bringing about the third industrial revolution.

## La Voix Médias



La Voix Médias is the advertising network for the Rossel-La Voix group based in Lille, in France's Nord-Pas de Calais region. It is supported by the expertise and audiences of the leading media group north of Paris, made

up of integrated media channels, all of which complement one another perfectly.

Every year, La Voix Médias launches nearly 20,000 communication campaigns targeting more than 4,200 clients via its press, digital, events, radio, TV and cross media solutions.

## With the support of the IAR Cluster



The Bioeconomy Cluster. The IAR competitiveness cluster has more than 360 members, representing the whole bioeconomy value chain. All of them are committed to using biological resources to develop sustainable technologies, food products – such as proteins – and non-food products. Since 2005, the IAR cluster has supported more than 220 projects, investing a total of more than €1.5 billion.

The IAR is also a partner in the Protein France consortium. Drawing on its regional, national, European and international network, the IAR engages in initiatives to develop the bioeconomy in France – specifically in the Hauts-de-France region and the eastern part of the country.

With the expert support of:



Seventure Partners finances the development of innovation in two sectors : Lifes Sciences and E-technologies. With more than 20 years of experience and thanks to a strong network in these fields, the company helps entrepreneurs to develop their innovation projects.



Nutrikéo Consulting is a marketing consulting firm specialized in nutrition. For the last 7 years, Nutrieko Consulting expertise has combined know-how in market strategy, innovation, communication and training for more than 160 customers (start up, SMEs and large companies) with the objective to develop new products and services and to promote new consumer behaviors.



IMPROVE is the first open European innovation platform fully dedicated to the valorization of proteins for the future. IMPROVE supports its clients in all proteins challenges, from fundamental research to market access.

## C/ Plant-based proteins

By 2050, 9 billion people will live on the planet, hence the need to intensify food production. Prospective studies show that food supply challenges will be on proteins rather than on lipids and carbohydrates.

While agriculture is already rich in protein production, animal-based proteins are still often favoured to plant-based proteins.

As a result, the biggest source of protein in the European Union is products of animal origin. 59% of daily protein intake comes from animal products (meat, fish, milk) and 41% from plant sources, more than half of which is wheat (FAOSTAT, 2009). Pulses and soya account for around 3% of daily protein consumption in Europe.

The French consume on average between 85 and 90g of protein per day, of which 60 to 65g are of animal origin\*.

It is therefore critical to strike a better balance between animal-based proteins and plant-based proteins in people's diets.

To achieve this, we must better understand plant-based proteins, innovate their production and processing to facilitate and accelerate consumption. This stake is not only primordial to nourish Humanity, it is also essential for the planet. The environmental impact resulting from the production of these proteins is often much lower than that of animal-based proteins.

*\* Source: Plant and animal-based proteins: towards a new equilibrium, INRA, April 2016*

### 1. What are the sources of plant-based proteins?

Several types of plants contain proteins that are suitable for human consumption, including pulses, grains and oilseeds.

Pulses are dried seeds from podded plants. These include, for example, peas, beans, lentils or dried beans.

The cereals are grasses, small-flowered plants grouped in cobs grown for the production of their grains. These are rice, wheat, spelt, oat, barley, and so on. Buckwheat and quinoa are also related to cereals. Although not considered to be grasses, their nutritional composition is similar to that of cereals.

Oilseeds are plants grown specifically for their high-fat seeds or fruits. Oilseeds - sunflower, flaxseed, rapeseed, sesame, squash, pine nut etc. - are especially rich in unsaturated fatty acids that are necessary for our body.

Algae, and especially the microalgae called Spirulina, are also acclaimed as a source of protein.

## 2. Innovate around plant-based proteins

If plant-based proteins are less consumed, it is perhaps due to ignorance of their real nutritional contribution and hence of their use. Compared to protein derived from meat or milk, proteins derived from pulses have a lower amino acid profile. They are poor in certain essential sulphur amino acids, which the body does not know how to produce efficiently on its own. On the other hand, these pulses are very rich in lysine. By comparison, it is exactly the opposite for cereals on these two points. Hence the idea of combining two types of plant-based proteins to balance the whole.

Also, plant-based proteins are often present in lesser amounts in food (compared to animal-based proteins). Their absorption is thus reduced. Furthermore, the human metabolism is more adapted to digest animal-based than plant-based products.

Beyond taste, cultural and environmental challenges, it is therefore necessary to accentuate the research and development to improve the nutritional properties of these very promising proteins.

### *C/ Plant-based proteins in Europe and in France*

Europe and France are highly dependent on protein imports due to a deficit in the animal feed sector. Indeed, France imports most of what it needs, as is the case with many other European countries. At the same time, part of the French and European protein resources is exported without any economic valuation being carried out in Europe. In France specifically, the valuations that are made within the country are mainly limited to products with a low protein concentration for animal feed.

However, France has significant protein resources. More than 350,000 tons of plant-based proteins are extracted annually from wheat, corn, potatoes and peas with a concentration of more than 50% of protein and 250,000 tons with a concentration of about 20%. In 2015, production of oilcakes (<50% protein) in soybean, rapeseed and sunflower was nearly 4 million tonnes, compared to 3 million tonnes in 2010. On the other hand, there is a high potential for increased protein production. Finally, new sources of proteins such as microalgae and protein derived from biotechnology are booming in France.

The opportunities for France, both in terms of creating and strengthening direct and indirect jobs and economic growth, are important. Thus, the value of a product can be multiplied by twenty according to its level of protein concentration. France is already an expert in the valuation of certain protein concentrates, but more markets are for the taking.

The stakes linked to the development of the French protein sector have been recognized by the State, notably within the framework of the New Industrial France and the “Agriculture 2025” initiative. With its expertise in the agricultural and food sectors, France has the necessary skills to seize the opportunity in front of them and to position itself as a world leader in the supply of protein by 2030.

## *D / The Hauts-de-France region: a powerful ecosystem around plant-based proteins*

The Hauts-de-France region is the first non-wine growing agricultural and agri-food region in France with nearly 2,300 establishments employing 51,400 people: 1 out of every 6 private employees are employed in the agri-food sector. Including agricultural jobs, we have 100,000 jobs and 4.8 billion euros in added value (second place in France). Structuring this ecosystem, two competitive clusters federate and support the innovation around plant-based proteins, namely the Nutrition Health Longevity Cluster (NSL) and the IAR - The Bio-economy Cluster.

Within this environment, dynamic young companies such as Alterfoodies (development of plant-based alternatives to dairy products) or On Breakfast (100% vegetable drink rich in micro and macronutrients for breakfast) are incubated by Eurasanté.

### **1. Leading research centres, technical platforms and training institutes**

The subject is also highly researched in research centres and platforms in the region. The ProBioGEM team of the Charles Viollette Institute, attached to the University of Lille 1 and specializing in agri-food and biotechnology, is dedicated to the development of bio-sourced molecules. The ASQV team aims to provide quality crop production and to develop methods to protect plants against various environmental changes.

The Picardie Jules Verne University's Biopi unit is also exploring the issue and is part of the PeaMUST project. Biopi is interested in understanding changes in the cell wall and metabolism during plant development. The PeaMUST project aims to develop new varieties of peas and to optimize their symbiotic interactions.

Similarly, the Extractis Agro-Industrial Technology Centre in Amiens, specializing in extraction, includes all the analytical facilities and/or the optimization of plant products.

Finally, IMPROVE is a one-of-a-kind open European platform that is totally devoted to the valorisation of proteins. With its 800 m<sup>2</sup> technical hall and 170m<sup>2</sup> laboratory, IMPROVE combines equipment and skills to boost innovation and value generation around plant-based proteins.

### **2. World leaders in the agri-food industry who have a global influence from the Hauts-de-France region**

In terms of industrial partnerships, the Hauts-de-France Region is the leading agri-food cluster in France. The Bonduelle international group carries plant-based food wellness products. Roquette, a supplier of solutions and products from biorefinery, transforms raw plant materials. Tereos, the world's second largest producer of wheat proteins, is stepping up its development in this area following the strong global food demand. Finally, Limagrain Céréales Ingrédients develops and manufactures functional flours and cereal ingredients and is yet another industrial example involved in the world of plant-based proteins.

### 3. A region in the heart of Europe

Lille is part of the dynamic of the Hauts-de-France region, which, with 34% of its population under 25 years of age, is the youngest in France. With 1,100 companies and 27,500 jobs, the Hauts-de-France Region is the 3rd largest health cluster in France. It generates nearly € 11.5 billion in sales. It remains closely linked to its European and even global environment, since the Region is the third largest in France in terms of direct foreign investment, notably by Germany, Belgium, the United States, the Netherlands, the United Kingdom and Japan.

This international proximity is relative to its geographical position: the Hauts-de-France region is at the heart of the European markets: 5 European capitals are less than 300 km away: Paris (62 min by train from Lille), London (82 min), Brussels (35 min), Köln (165 min) and Amsterdam (185 min).

This direct access offers real opportunities for business development, dynamic ecosystems and attractive operational costs. The available market totals 78 million people with a purchasing power of 1,500 billion euros.

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#### **FIND ALL INFORMATION ABOUT THE CALL FOR APPLICATIONS HERE:**

<https://www.agorize.com/village-by-ca-nord-de-france>