



FRIZON

Sustainable growth

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Development principles



The impact of precision agriculture

The latest innovations in precision agriculture are reshaping our field of activity for good. Not only in terms of production or profitability, but also in terms of community development and economic impact.

Our interconnected systems and equipment are minimizing the associated risks of the agricultural business, offering our investors a fully transparent and accountable partnership. Furthermore, our example is increasing the overall appeal of the region, establishing benchmarks and good practices.

Designing a fully integrated business model

Our vision goes toward a fully integrated business model which will encompass the entire value chain, from supplies and equipment, origination and processing to storage and distribution of a wide range of agricultural products.

We ensure competitive costs and deployment times due to the streamlined processes and in-depth market and field intelligence. All our technological innovations and investment strategies focus on full accountability of the circular cycle and traceability of our products.



Providing full accountability

In order to be a useful vector in our country development, we try to implement an “open source” model in our company. Generally, open source refers to a software in which the source code is available to the general public for use or modification from its original design. The open-source code of our company represents all our bookkeeping and farming records – this is meant to be a collaborative effort in the future, where other farmers and non farmers will improve the source code and share the changes within the community.

Our bookkeeping and farming records are kept and made available through our external audit effort. External audit serves many purposes, but the principal tasks include:

- **Risk assessment** – Assisting management with identifying and prioritizing areas or processes that require attention and audit focus
- **Process walkthroughs and documentation** – Gaining an understanding of the processes and procedures as they currently exist, especially with respect to the IT systems utilized in the processing of high volumes of policyholder/claims data.
- **Control assessment** – Identifying gaps, also known as “trouble spots,” where procedures and controls are not properly designed
- **Testing** – Performing tests of controls to verify whether controls are working as designed
- **Reporting** – Providing observations and recommendations to improve processes and controls.



Blockchain support for product traceability

By 2030 “The biggest result is that at least one group is going to break the 90-year barrier of life expectancy,” said Majid Ezzati, professor of global environmental health at Imperial College London. This will be done only if food safety becomes a growing concern for citizens in many countries. Outbreaks of disease in animals that could be transmitted to humans such as the avian flu, or the presence of chemicals above acceptable limits in feed and food, can threaten both the quality and safety of products. The need to be able to withdraw or recall products identified as unsafe has become essential to protect people from foodborne diseases. Traceability is a risk-management tool which enables food business operators or authorities to respond to that need. It is a cornerstone of any country’s food safety policy.

Traceability is the ability to identify the origin of food and feed ingredients and food sources, particularly when products are found to be faulty. A traceability system allows our organization to document and / or locate a product through the stages and operations involved in the manufacture, processing, distribution and handling of feed and food, from primary production to consumption. It can therefore facilitate the identification of the cause of nonconformity of a product, and improve the ability to withdraw or recall such product if necessary and prevent unsafe products from reaching the customers.

Blockchain provides a permanent record of transactions which are then grouped in blocks that cannot be altered. It could serve as an alternative to traditional paper tracking and manual inspection systems, which can leave supply chains vulnerable to inaccuracies. When applied to the food supply chain, digital product information such as farm origination details, batch numbers, factory and processing data, expiration dates, storage temperatures and shipping detail are digitally connected to food items and the information is entered into the blockchain along every step of the process.

The information captured in each transaction is agreed upon by all members of the business network; once there is a consensus, it becomes a permanent record that can’t be altered. Each piece of information provides critical data that could potentially reveal food safety issues with the product. The record created by the blockchain can also help retailers better manage the shelf-life of products in individual stores, and further strengthen safeguards related to food authenticity. Across ecosystems, business model changes enabled by blockchain can bring strengthened trust and transparency, and a new nexus for value exchange.



Making the most of new technologies

- **The auto-guidance system** (e.g. the light bar system, the auto steering wheels, the advanced auto-guidance system of tractors, combine harvesters or treatment executing self-propellers’ hydraulics, realized through different types of corrections, such as DGPS, RTK, RTX etc., followed by autonomous machinery in the near future);
- **The input and output management system** (the so called Variable Rate Application maps according to different management areas: VRA - for the fertilizers norm, VRA - for the sowing norm, VRI - for the irrigation norm, VRA - for the working terrain depth, VRA - for the quantity and quality of harvested products, as well as a mixing station for combining pesticides “from a distance”).
- **The Soil Information System** (SIS - creating multiple “layer” type images regarding the physical and chemical properties of the soil)
- **The GIS System** (The Geographical Information System implies creating a database of geographic information and interpreting it statistically through NDVI satellite maps, through climatic data coming from weather stations, data regarding machinery positions, real time coverage area and diesel, seeds and fertilizers consumption, through real time surveillance cameras etc.);
- **AI: Precision agriculture** is, in fact, the first step in understanding what people are trying to work on, and to get the best results in this domain, technology is also taking a step forward in logging all of these efforts through IoT, so that, through simple logic, the next big thing would be developing an open script of agriculture AI, and later, a true, non-scripted AI.

Sustainability vision

The unique microclimate of our core cultivation area is one of our main long term assets. In order to conserve the balance of this special interest agro-ecological zone, we have launched a partnership with the Valea Neagră Association, in order to protect the local flora and fauna.

Crop rotations are one essential dimension of the art and science of farm management. The biological principles of crop rotation intersect with many other aspects of the farm operation and farm business. Crop rotation is both a principle of production and a tool of management. Expert farmers balance market options and field biology. Labor, equipment, the layout of beds and fields, along with other logistics of planting and harvest, all influence how rotations are designed and executed. Expert farmers' rotations include key cash crops, "filler" or "break" crops, and cover crops. Every season, farmers must manage production across multiple fields and beds. Variation in the acreage of each crop, variation in field characteristics, and shifting business decisions result in multiple rotations or crop sequences on most farms. Consequently, farmers manage numerous crop rotations on the same farm. In our farm the main crop rotation is corn followed by a cover crop, corn, sunflower and then peas and then we go back to corn again.

One of our key solutions for soil fertility is chicken manure. We plan to apply 25 tons per ha for about 1000 ha each year, and decrease the amount of chemical fertilizers on this ha with 70%. Commercial and sustainable farming has been relying on organic fertilizers for growing crops in most western European countries. This is because inorganic fertilizers are easy to use, are quickly absorbed and utilized by the crop. However, in the long run, they destroy the soil structure if they are not used carefully and increase the costs of production resulting in reduction of profit in crop production enterprises. Due to high energy costs, inorganic fertilizers have become very expensive and also scarce, especially in developing countries. The chemicals used in conventional agriculture contain few minerals, which quickly dissolve in damp soil, but give the plant large doses of active substances, and in exchange, they alter the physical and chemical properties of the medium (soil). This happens in a relatively short period of time and the plant usually receives more nutrients than needed.

For us, one of the main purposes in using chicken manure is to decrease the fertilizers cost per ha, increase soil uniformity and fertility, focusing on phosphate.

Strategic investments

Tătăranu storage, handling and distribution facility

In 2018, we have acquisitioned a decommissioned sugar factory that will be repurposed as strategic storage, a handling and distribution facility with railroad access. In the next decade, the capacity of the storage, handling and distribution facility will be upgraded up to 150.000 tones.

We are planning considerable future investments including:

- The upgrade and rehabilitation of the electrical power system;
- The upgrade and rehabilitation of the natural gas supply system;
- The rehabilitation of the water supply and drainage systems;
- The construction of a weighing bridge;
- The installing of a lorry sampler probe and a state-of-the-art grain analysis laboratory;
- The construction of a receiving pit and a buffer silo with grain separator and dryer;
- The construction of a conveyor belt for transportation to the railway wagons.



Irrigation systems

The group currently includes 6 WUA: SPP1 Maiaprodsilva, SPP3 Măicănești, SPP 10 Gabana Ferm, SPP5 Nămoloașă, SPP6 Nămoloașă and SPP3 Nămoloașă . We have started a systemic rehabilitation process of the existing infrastructure, and this irrigation organization will be established in order to cover a 4.200 ha surface in the next three years. In 2019 we will develop our first pivot irrigation systems for 260 ha, upgrading it to 3.000 ha until 2023. We aim to cover the entire cultivation area with our irrigation systems by 2024.

Key figures

58.000.000
euros

Total investments
by 2028

10.000
ha

Sum of the cultivation
area by 2028

150.000
tons

Capacity of the storage,
handling and distribution facility
by 2025

230%

Return on investment
target 2018-2028

320%

Annual turnover growth 2018-2028

240%

Cultivation area growth 2018-2028

Business opportunities

Our development model relies on four pillars: long term debt, fixed interest investments, limited liability partnerships and specialized European funds. We strongly believe that precision agriculture, namely in Romania, is one of the best investment opportunities for international funds and serial investors. We are notably looking for partners who believe in farming and who lost faith in the conventional way of investing. We plan to pursue **debt-based** fundraising from small or big investments companies or individuals. Debt-based crowdfunding is another form of crowdfunding that is gaining attraction. This model of crowdfunding involves requesting support and resources from other investors in exchange for interest.

Debt-based crowdfunding, which is also commonly referred to as “crowd lending”, has proven to be a great alternative for fast developing companies, because although it is similar to acquiring a traditional bank loan, but often with competitive and lower interest rates, with more flexibility and options to secure resources. In debt crowdfunding the potential partner is also investing in the security of the company (namely a debt instrument of some type) where their goal is to loan money to the company with a fixed repayment term and our company will pay them a specified interest rate during the term of the loan.

Debt-based crowdfunding has been described as a “win-win” because it provides investors with a relatively low-risk return and entrepreneurs with the ability to retain equity.

Roadmap

2013

- Frizon Group starts its activity as Frizonagra, with a cultivation area of 500 ha and an initial investment of 500.000 Euros.

2014

- The cultivation area is extended to 1.100 ha.
- The group assumes the presidency of Water User Association (WUA) SPP1 Maiaprodsilva and starts the rehabilitation of the secondary irrigation infrastructure.

2015

- Two new companies – Frizonmaica West Wild River SRL and Frizonagra Crops SRL – are created and join the group. The cultivation area reaches 2.600 ha.
- First farm monitoring systems are implemented and tested.
- The base of operations and the storage facilities are refitted.

2016

- The cultivation area reaches 3.400 ha. Gabana Ferm SRL joins the group.
- The production capacity is significantly increased through massive investments in equipment and the optimization of processes using precision agriculture principles and systems.
- The group assumes the presidency of the irrigation company WUA SPP 10 Gabana Ferm, which also joins the group.
- The production flux is optimized, focusing on the most profitable crops: corn, sunflower and pea.

2017

- Integrating the operations of a farm in Măicănești. The cultivation area reaches 3.700 ha, and the group turnover tops 4.000.000 Euros.
- Agricola Oostrem SRL joins the group, as new investors are brought in. The group assumes the presidency of the irrigation organization SPP 3 Măicănești.

2018

- The investments in equipment reach over 1.000.000 Euros.
- The group activity is broadened by the acquisition of a decommissioned sugar factory, that will be repurposed as a strategic storage, handling and distribution facility with railroad access.
- In order to use chicken manure as organic fertilizer and improve sustainability, the group signs a 5 years partnership with Vanbet SA Vaslui.
- The group starts the rehabilitation of the WUA SPP1 Maiaprodsilva pumping station.
- Three new irrigation organizations are established in order to cover a 2.200 ha surface.

2019

- Over 400.000 Euros will be invested in equipment. The cultivation area will reach 4.000 ha.
- The implementation of the first center pivot irrigation systems for 260 ha.
- Modernization and reconstruction of the irrigation center WUA SPP1 Maiaprodsilva.
- Capacity upgrade and rehabilitation for the Tătăranu storage, handling and distribution facility, using European funds and/ or long term credit.
- Launch of the first internship program for future graduates.

2020

- Focus on optimization of the production flux through investments in new equipment and new technologies such as sequential fertilization of soil. Acquisition of the first fully autonomous tractor system.
- Modernization and rehabilitation of the secondary irrigation infrastructure of WUA SPP10 Gabana Ferm.
- Extension of center pivot irrigation systems by 500 ha through US Eximbank funding.
- Conduction of a feasibility study for the development of a broiler poultry farm in Măicănești.
- Development of infrastructure and integrated technological system for the storage and usage of liquid dejections from the pig farming Danish group Premium Porc.
- Extension of the cultivation surface by 500 ha through lease or acquisition.
- Launch of an internship program focused on farm management.

2021

- Launch of the construction of a livestock combined feed manufacturing facility on the premises of the Tătăranu storage, handling and distribution facility.
- Launch of the construction project for the pumping stations of three new WUAs in Nămolosa.
- Handover of the modernization and rehabilitation projects for the WUAs SPP1 and SPP10.
- The center pivot irrigation systems will cover up to 1.500 ha.
- Launch of the construction of the broiler poultry farm in Măicănești.
- Extension of the cultivation surface by 1.000 ha through lease or acquisition.

2022

- The fully autonomous system is implemented for the entire equipment fleet.
- The Nănești head office is reconverted into an Agricultural Mechanization Station. The head office is relocated within the Tătăranu storage, handling and distribution facility.
- Purchase of two new high capacity tractors (600 HP).
- Handover of the livestock combined feed manufacturing facility.
- The center pivot irrigation systems will cover up to 1.500 ha.
- Extension of the cultivation surface up to 6.500 ha through lease or acquisition.

2023

- Handover and launch of operations for the broiler poultry farm in Măicănești.
- Full integration of the cultivated area. The center pivot irrigation systems will cover up to 3.000 ha.
- Extension of the cultivation surface by 1.000 ha through lease or acquisition.

2024

- Logistic optimization using a platform network in the vicinity of the broiler poultry farm.
- The irrigation systems will cover the entire cultivation area.
- Extension of the cultivation surface by 1.000 ha through lease or acquisition.

2025

- Doubling of the production capacity of the broiler poultry farm.
- Conduction of a feasibility study for a 10 ha photovoltaic power station in the proximity of the Tătăranu storage, handling and distribution facility.
- Upgrade of the capacity of the storage, handling and distribution facility up to 50.000 tones.
- Drafting the organic development strategy of the group based on "business cells".

2026

- Conduction of a feasibility study for a meat processing plant.
- Launch of the construction project for a photovoltaic power station.
- Extension of the cultivation surface by 1.000 ha through lease or acquisition.

2027

- Rehabilitation of the railway infrastructure within the Tătăranu storage, handling and distribution facility.
- Start of construction for the meat processing plant in Măicănești.
- Diversification of the crop portfolio including high-value crops: potato, onion, carrot, beetroot.
- Handover of the photovoltaic power station.
- Implementation of a blockchain solution in order to ensure full accountability and traceability for the production flux.

2028

- Handover of the meat processing plant in Măicănești.
- Purchase of a locomotive and cars fitted for agricultural cargo.
- The cultivation area reaches 10.000 ha.
- First direct exports through an owned harbor storage facility.
- Opening of new business units and scaling of the business model at a national level using "business cells".