

duction of field crops and has authorization for the production and multiplication of seed material.

“It is important that we have managed to move to full land processing based on the mini-till agriculture system, and in some sectors the no-till system is being tested and researched for the gradual and well-argued transition of the enterprise” says Ion Curjos.

The experience and the correct management facilitated the correct development of the enterprise in the hard conditions of the southern area of the country and currently the entity has a complex material technical base.

“An important lesson we have learned is that high-capacity technology is much more recommended in the conservative farming system, because it can perform several operations simultaneously (direct no-till sowing, combine, etc.), it doesn't compact the soil excessively and the agricultural technique is used more rationally with lower direct costs”, mentions the farmer.

The managed agricultural land area is 2,700 hectares: cereal and technical crops.

The production factors, and especially the natural ones, from the southern part of the country, led to a thorough analysis of the premises and challenges of implementing the system of conservation agriculture in the company, which were based on the following reasoning:

- The negative effects of global warming are becoming increasingly visible in the field of agricultural production. The lack of moisture in the soil becomes more and more stringent, being the most pronounced risk and becoming the limiting factor in the development of agricultural crops;
- Of particular importance is the increase of soil quality and the reduction of soil erosion;
- Rationalize the use of resources in agricultural technologies, such as: seeds, fertilizers, plant protection products, fuels.



Ion Curjos states that he is satisfied with the decision to implement the conservation agriculture system in 2013. The correct agrotechnics and consistent decisions have contributed to the fact that soil compaction is currently reduced and this is beneficial and facilitative in conservation agriculture.

A decisive and important step in the adjustment and finalization of conservation technologies was the participation in the Inclusive Rural Economic and Climate Resilience Programme funded by the International Fund for Agricultural Development (IFAD) within which the Farmer Field School was established.

Within the FFS, the demonstration plot on 43.23 ha was organized and the control plot was on 16.77 ha cultivated with agricultural crops. The company implemented the investment project in the amount of 2,614 thousand lei, the money was invested in the acquisition of agricultural machinery: multifunctional combine and no-till cereal seed drill.

“The assistance and consultancy offered within the Program in the field of conservation agriculture was very useful and beneficial to the enterprise, because the economic effects in dynamics were analyzed with the concrete and sound argumentation of the positive results; modernized technology for applying the mini-till system and soil testing for the years 2017-2020 provided qualitative information of the positive effects and encouraged the company that it is on the right and sustainable way to practice agriculture with slow but good improvement of the factors of production and first of all the quality and structure of the soil.

The acute shortage of qualified specialists is a problem for farmers, but here the economic expertise provided by IFAD by the employed economics expert demonstrated the economic rationality of applying conservation agriculture and reducing costs:

- *The average yield on the demonstration plot is 16% higher than the yield on the control plot;*
- *The income from sales per hectare on the demonstration plot is 20% higher than on the control plot;*
- *The direct costs per hectare on the demonstration plot are lower by 18.6% compared to the control plot;*
- *The gross profit per hectare on the demonstration plot is 21% higher compared to the control plot”,* underlines the agricultural producer.

The most appreciated result of the application of conservation agriculture and which the company's management is proud of is the improvement of soil quality and structure, which makes it possible to record the following results: soil structuring and humus increase by increasing the amount of quality organic matter; balancing the fertilization system, as a component obtained by chemical analysis of the soil and differentiated application of fertilizers according to the results of the analysis; increasing soil productivity by conserving moisture and biodiversity.



The company pays special attention to the application of its own innovations and experiments for the modernization of technology in the system of conservation agriculture, among which the following can be highlighted:

- implementation of the conservative agriculture system, taking into account the pedo-climatic specificity of the area and global changes;
- differentiated implementation of fertilizer application technology, depending on the chemical analysis of the soil.

„Based on the pedological researches in the company on the plots of the Farmer Field School with the support of IFAD, non-essential changes in the physical quality of the soil during 2017-2020 were highlighted, which is explained by maintaining a proper agrotechnical system on the fields and the existence of an excellent soil texture for the application of the agricultural conservation system. In the process of adapting the conservation soil technology in the Natcubi-Agro farm, during 10 years of the use of conservation technologies of soil tillage, we collaborated with many fellow farmers from the Republic of Moldova, Romania and Ukraine, with the professors from the Agrarian University and from the pedological institute "N. Dimo". We are members of the C.E. "Agrostoc", with which we have an efficient and advantageous collaboration in the implementation of innovations and modernization of technologies for the production of field crops", says Ion Curjos.

The farmer is aware that further efforts are needed to ensure efficient and sustainable development. The company has a development strategy, which is based on the implementation of conservation agriculture and the transition to no-till for the entire area.



For the following years, "Nadcubi-Agro" Ltd. plans a series of activities and investments: continuous modernization of conservation technologies by applying existing experiments and innovations, application of no-till technologies on all surfaces of the company, construction of the warehouse for storing 2,000 tons of grain in 2021.

The most complex projects are aimed at minimizing risks in agricultural production and provide for the achievement of the following long-term objectives: implementation of investments to ensure irrigation of fields on the Prut River (the main route is restored through the Compact Program) and irrigation of 1,200 hectares of land to ensure intensive technologies for cultivating field crops and those with added value, the application of the system of conservation agriculture based on three principles: minimum soil disturbance, correct crop rotation and covering the soil with vegetable residues and cover crops.

P.H. „Gîrlea Andrei Pavel”

Saving financial, material, energy resources and reducing soil and environmental degradation are our priorities

P.H. „Gîrlea Andrei Pavel” manages over 2300 ha of agricultural land located in 11 villages in Rezina district. The company was founded in 2000 in order to obtain agricultural production and provide mechanized services for agricultural land processing.

The management of the company has a special approach to the soil and considers that, if we understand that saving financial, material, energy resources and reducing soil and environmental degradation are our priorities and thus ensure a healthier environment and care for future generations, then conservation agriculture will dominate as a system of production in agricultural enterprises.



The plot sown with lavender

During its activity, the household experienced a dizzying development: there were built warehouses and a mini lavender processing factory located on its own 11.2 ha plot. The farm currently has a technical park with 15 tractors, 6 combine harvesters and about 46 towed or worn agricultural equipment.

“We specialize in the production of field crops and the provision of services. The household grows autumn wheat, autumn and spring barley, peas, soybeans, sunflowers, corn. In previous years, the household cultivated hetero-oilseeds (lavender, sage, coriander), using the mini-till and partial no-till soil processing method, on about 70-80% of the total land area”, says Andrei Gîrlea, the household leader. P.H. “Gîrlea Andrei Pavel” was selected on the basis of a competition by the Consolidated Unit for the Implementation of IFAD Programs (IFAD), as the basis for founding the Farmer Field School (FFS), with the creation of the demonstration plot for schooling agricultural producers to use correctly conservation tillage technologies (CTT).

According to the requirements of the project for the creation of the FFS’s entity, two demonstration plots with a total area of 162 ha and a control plot with a total area of 11 ha of the total area of agricultural land under management were identified. They are intended for the implementation of minimum tillage technologies and the familiarization of agricultural producers with the methods of implementation of these technologies.



Case IH Patriot self propelled sprayer



Tractor and seed drill for sowing autumn wheat by using CTT

“The experiences obtained within FFS have shown us that the application of conservation agriculture combats the erosion of agricultural lands and uses the remains of the previous crop to accumulate and reserve soil moisture. This system contributes to a large extent to the accumulation and storage of organic matter in the soil”, mentions Andrei Gîrlea.

The producer says that the premises and challenges in applying the system of conservative farming in the household were based on the following reasoning:

- Carrying out the transition period with minimal risks, concerning harvest reduction;
- The complex approach to solving the problem of resource conservation in agricultural technologies, which aims at the efficient functioning of each resource involved: seed, fertilizers, plant protection products, fuels;
- The main purpose of CA implementation is not only the higher level of harvests, but we also need to obtain more stable profitability indicators;
- An essential factor in the efficient use of resources in high-performance agriculture is the combination of CA technologies: mini-till, strip-till, no-till; *“All the interested people should know that the transition to conservation agriculture requires investment for a new system of agricultural machinery, additional costs for plant protection products to control weeds, diseases and pests,”* said the leader of P.H. “Gîrlea Andrei Pavel”.

Today, the peasant household has all the necessary equipment and agricultural inventory, the investments in this field being 1.5 million euros.

The advantages of applying the technology are considered the following:

- 1) it increases soil permeability to water and improves overall soil drainage;
- 2) soil erosion is reduced, plant residues left on the soil surface or incorporated at depth, where biological activity is maximum, contribute to moisture conservation, growth of soil fauna and flora, which restores soil structure and reduces surface and depth compaction;
- 3) it increases the content of organic matter in the soil, and in the long run, it increases fertility, maintains the quality of groundwater and surface water, maintains air quality by reducing fuel emissions, by reducing carbon released into the atmosphere;
- 4) the time of soil work is reduced by 2-3 times;
- 5) fuel consumption per unit area is reduced by 30-40%.

“Today we focus on the production of crops with increased added value and adjust the structure of sowing according to the requirements of the market, which, from our point of view, can be considered an economic advantage. We managed to optimize costs by reducing the number of agricultural works, replacing plowing and preparing the germination bed with reduced work or direct sowing, which reduces fuel consumption, labor consumption and increases productivity. In this way, an increase in profit is estimated compared to conventional technology”, says Andrei Gîrlea.

The farmer considers that conservation agriculture is a system of agriculture that can prevent the loss of arable land and, at the same time, regenerate degraded land, promote the maintenance of permanent soil cover, minimal soil disturbance and diversification of cultivated plant species; it enhances biodiversity and intensifies natural biological processes above and below the soil surface, which contributes to increasing the efficiency of water and nutrient use, and to sustainable crop production.

“During the five years of implementation, we have collaborated with many farmers passionate about this type of agriculture. Here we are talking about the experts hired by IFAD, the collaborators of ISPCCC “Selection”, guests from abroad. In the period 2017-2020, we organized 8 theoretical-practical trainings attended by more than 300 people. Through seminars and field presentations we were able to share the information and experiences gained. By applying conservation technology, we have obtained an increase in the rate of production of biological mass, as a result of which nutrients are recycled. At the same time, pests and plant diseases have been reduced and the structure of the damaged soil has been restored”, underlines the farmer



The director of the household Gîrlea Andrei

The implementation of conservation tillage technologies, based on mini-till and no-till, led to a certain increase in crop yields in the early years, and as a result in the household there was recorded a higher and more efficient level of soil moisture due to the layer of mulch formed on the soil surface and to the balanced application of complex chemical fertilizers. For the next few years, the company plans to cultivate its soil through several agro-technical methods, depending on the amount of rainfall and, in general, the climatic conditions. In the future, the return to hetero-oil crops is also planned.

After the implementation of the conservation agriculture system based on mini-till or no-till tillage technology, P.H. „Gîrlea Andrei Pavel” established a permanent pedological monitoring on its own fields, according to these technologies, in order to detect some negative phenomena and to take measures to liquidate them in time.

„Golden Grapes & Cereals” Ltd.

The implementation of mini-till agriculture is a correct step, a little delayed, due to the lack of experience and application information.

„Golden Grapes & Cereals” Ltd has been implementing the technology of conservation agriculture since 2016.



The company actively monitors and analyzes soil quality

“We can say with certainty that the implementation of mini-till agriculture was a correct step for our company, a little late, due to lack of experience and application information” said Constantin Sandrovski, the head of “Golden Grapes & Cereals” Ltd.



Agricultural technique exhibited during FFS IFAD training

The company has been operating since 2013. The agricultural production is located in Caracui village, Hincesti district. The type of activity is the production and marketing of agricultural production (field crops and technical grapes).

The company practices modern technology for the production of field crops, based on the use of innovations and advanced experience in the agri-food sector. The company has a modern material technical base, which allows the execution of agrotechnical works in the optimal period. The technical park is completed with state-of-the-art processing and protection equipment with 25 agricultural units and 2 warehouses with a capacity of 2,500 tons.

The area of managed agricultural land is 1,340 hectares (including 1,300 ha of arable land and 40 ha of vines, technical varieties).

The transition to the system of conservation agriculture was based on the following aspects:

- Increased risk area for frequent droughts in July – September;
- Efficient use of circulating means: seed, fertilizers, phytosanitary products, fuels;
- The main purpose of CA implementation is to obtain more stable profitability indicators;
- Combined use of CA system technologies: mini-till, strip-till, no-till.

In 2017 the company participated in Inclusive Rural Economic and Climate Resilience Programme and was selected for the creation of FFS, where the demonstration plot was organized on 38.2 ha and the control plot – on 24 ha cultivated with agricultural crops. Within the Program, the Company implemented the investment project in the amount of 2,287 thousand lei, which included: 42.8% IFAD grant portion and 57.2% – own investments.

The investment made in the project was channeled to the procurement of agricultural machinery: multifunctional disc scarifier, height-adjustable trailed sprayer and No-till and Mini-till hoe seeders.



Demonstration plot for sunflower hybrids

„The Field School program was a complex and beneficial one for our company in terms of finalizing the mini-till technology, and the provided advice and assistance facilitated the finding of reasoned and applied answers in this regard. Training and promotion activities of the conservation agriculture system were organized within the FFS”, says Constantin Şandrovşchi

Within the School there were organized 11 trainings for 324 beneficiaries, it provided mechanized services to small and medium farmers with the technique procured within the Program, facilitating the evaluation and monitoring of the results of the application of conservation agriculture compared to the conventional one on the control plot.

„At present, the management of the Company can state with certainty that the implementation of mini-till agriculture is a correct step, a little delayed due to the lack of experience and application information. Mini-till tillage is the first stage of the transition to conservation agriculture, which will be succeeded by no-till agriculture”, mentions the head of the enterprise.

The producer states that the system of conservation agriculture has positive effects that will further increase with the passage of the period of conversion and improvement of the soil structure.



“The company applies conservation technology on an area of about 250 ha, which represents 20% of the total area, another 50% are processed according to the mini-till technology and the rest, 30% – according to conventional technology. In the coming years, the Company will also implement the strip-till technology, completely replacing the conventional one”, underlines Constantin Sandrovski.



The efficiency of production costs by applying the conservation agriculture system ensures the following positive aspects in the company, namely:

- Reducing the number of technological operations and mechanical disturbance of the soil;
- Efficiency of the fertilization system in conservation agriculture;
- The average yield on the demonstration plot is 14.5% higher than the yield on the control plot;
- The income from sales per hectare on the demonstration plot is 15% higher than on the control plot;
- The direct costs per hectare on the demonstration plot are lower by 13.4% compared to the control plot;
- The gross profit per hectare on the demonstration plot is 23.2% higher than on the control plot.



The exploitation of agricultural machinery in the system of conservation agriculture allows the enterprise to record the following positive effects:

- reduction of fuel consumption by 26.8%;
- reduction of the wear degree of agricultural machinery;
- more rational and efficient use of production factors.

Improving soil quality is an important factor for the management of the enterprise and by applying conservation agriculture, it seeks to obtain the following positive results:

- improved soil structure, a factor influencing the reduction of soil erosion;
- balancing the fertilization system and differentiated application of fertilizers, depending on the results of the analysis (the company implements the mapping of fields depending on the creditworthiness and the distribution of fertilizers based on proven need);
- increase of soil productivity.

“In the context of climate resilience, it is important for the company to minimize natural risks and ensure the sustainability of crop cultivation: the conservation mode of agriculture reduces the risks caused by climatic conditions, especially the drought frequently encountered in the center of the country; ensuring the flow of organic matter and conserving moisture in the soil are extremely important for the area in which the company operates, as well as minimizing the risks”, underlines the leader of „Golden Grapes & Cereals” Ltd.



Development of the root system in conservation agriculture



Agricultural technique and mini-till tillage

Within the plots cultivated according to the conservation technology, the company implements platforms for testing the varieties and hybrids of cereal and technical crops from the suppliers and distributors of seed material. The company's experiments in the cultivation of autumn wheat and barley began with increasing the distance between rows and decreasing the density of plants per hectare. The obtained results are positive, which also brought to an increase in production and allowed the company to focus more on seed quality (selection, calibration and treatment of cereal seeds).

“The relatively short company's activity in the agricultural field has allowed the accumulation of good experience and we recognize that there is still much work in modernizing production, which for the next 2-3 years provides continuous implementation of conservation technologies by applying innovations, minimizing production costs and streamlining technological processes, implementing investments in the years 2021-2022 for the creation of the field irrigation system, 200 hectares of land to ensure intensive technologies for cultivating field crops and 40 ha – perennial plantations”, says Constantin Sandrovski.

In the last 2 years the company invested in soil analysis, mapping 200 ha of agricultural land. Field mapping allows fractional and even distribution of fertilizers throughout the field with the Kverneland Exacta TL fertilizer spreader, which will also bring additional profit and considerable fertilizer savings (estimated 15-25%).

In the coming years, the company plans to implement complex investment projects in tillage equipment, application of the conservation agriculture system, but also the digitization of production processes to ensure efficient and qualitative operational management of agrotechnical decisions.

The Institute of Pedology, Agrochemistry and Soil Protection „N. Dimo”

The Dimo Institute has always provided permanent scientific assistance to agricultural units and farmers

The Institute of Pedology, Agrochemistry and Soil Protection „N. Dimo” was created in 1952, today it is a fundamental and applied scientific research institution in the field of agricultural sciences, a member of the Academy of Sciences of Moldova, structurally subordinated to the Ministry of Agriculture and Food Industry.

The Institute is the national leader in soil resources research.

“Healthy and rich soil stimulates civilizations development, and its disease and impoverishment leads to the death and disappearance of civilizations. Throughout its existence the Institute has provided permanent scientific assistance to agricultural units and farmers, design institutions, production, higher education. This assistance also materialized through the elaboration and publication of scientific papers, as well as numerous technical-documentary materials: methodical instructions, prescriptions, recommendations, programs, projects, manuals, maps, plates, diagrams, etc.”, says Leonid Popov, the director of the Institute.



CTT machine complex





Trainings with the presentation of results on the demonstration and control plots

All these materials are permanently capitalized by the institutions that use the soil as an object of study, when mapping the soil cover with different degrees of precision and detail in order to inventory the land and identify its quality, using the rating method, developed within the Institute. In turn, this information is indispensable for landscaping, carrying out measures to combat soil erosion, applying different doses of chemical and organic fertilizers to all crops grown in Moldova, performing improvement works, determining soil quality, etc.



"Participating in IRECR program, we were selected by IFAD for the creation of the Farmer Field School (FFS) on a total area of about 37.3 ha, of which 21.2 ha for the demonstration plot and 16.1 ha for the control plot. Our interest was based on existing researches and their application on larger plots in order to achieve scientific experiments between conservation and conventional agriculture in the period 2017-2020. The FFS's plots are located in Ivancea village, Orhei district", informs Leonid Popov.

The economic results obtained by the Institute met the expectations. With the exception of 2020, most fields have had favorable economic results. The average rate of return of the demonstration plot was about 35% during the years 2017-2019. Diesel consumption in physical units, unit costs per unit of production and unit area have been considerably reduced.



"For example, in 2018, on the autumn wheat field of the demonstration plot, the profit registered by us was twice higher than on the control plot. In 2019, on the field of the demonstration plot sown with rapeseed, the profit was registered 2.5 times higher than on the control plot.

Our research shows that the application of conservation agriculture combats the processes of erosion of agricultural land and the remnants of previous crops are used to accumulate soil moisture reserve. This system contributes to the accumulation and storage of organic matter in the soil", informs the director of the Institute N. Dimo.

As a result of the collaboration with IFAD within the respective project, the institution acquired the necessary agricultural equipment for the implementation of conservation agriculture. The cumulative value of the investment was about 1.3 million lei. This investment has made it possible to renovate the fleet of cars and tractors in connection with recent experiences in the field.

"Our research in the field of pedology demonstrates a number of aspects, including:

- 1. the preventive restoration of the quality status of the dehumidified, destructured arable layer without resistance to compaction is absolutely necessary to be carried out until the implementation or during the implementation process of the conservation agriculture system, based on mini-till tillage technology;*
- 2. sowing of leguminous agricultural crops in crop rotation;*
- 3. crop rotation and annual leguminous intermediate crops used as green manure are the basic elements that must be used in the system of conservation agriculture", says Leonid Popov*

The institute will continue the scientific research in the field of CTT on the lands from Ivancea village. The research results will be the basis of methodical elaborations in order to manage soils by farmers in conditions of climate resilience. Collaboration with agricultural enterprises in the field of pedology and CTT will increase the determination and appreciation of farmers to use the option of conservation agriculture in the current climate change. The scientists' recommendations serve as a benchmark for the business environment in view of conservation tillage technologies.

„Agrored L.V.” Ltd

Conservation agriculture is the most rational solution proposed as a measure of resilience to climate change

“Conservation agriculture is the future of local agriculture. In conservation agriculture there are no small and unimportant things, all technological processes are of major importance. In order to do conservation agriculture, a lot of knowledge is needed”, says the head of „Agrored L.V.” Ltd. enterprise Leonid Țilea.

Agrored L.V Ltd was founded in 2014 and manages 52 hectares of agricultural land. The company produces cereal crops and has 3 warehouses to store agricultural production which ensures the full storage of its own production, this fact allows marketing in the convenient period, according to the price on the domestic market.

When participating in the Inclusive Rural Economic and Climate Resilience Programme financed by the International Fund for Agricultural Development (IFAD), the Farmer Field School (FFS) was created on a total area of about 24 ha, of which 20.8

ha for the demonstration plot and 3.7 ha for the control plot. The purpose of the school was to perform comparative experiments of the results obtained from the implementation of minimum tillage technologies with those of conventional agriculture in the period 2017-2020.



Agricultural equipment of the company



Inspection of the demonstration plot

„Currently we manage in consortium with „Soroagro” Ltd. about 1,158 ha of agricultural lands in the localities of Parcova and Rediu Mare. The premises and challenges identified by us in the application of conservation agriculture were based on the following reasoning:

- *carrying out the transition period with minimal risks in order to increase the harvest;*

- *complex approach for solving the problem of resource conservation in agricultural technologies, which aims at the efficient functioning of each resource involved: seed, fertilizers, phytosanitary products, fuels;*
- *obtaining more stable profitability indicators not only for high yields;*
- *combining CA technologies: mini-till, strip-till, no-till”, says Leonid Țilea.*

In order to support the company and to interest the administration to support and develop the FFS in those periods, IFAD, through the IFAD IV Grant Program, awarded a grant of about USD 500,000. FFS’s investment project within the company has a budget of \$ 103,000, of which 51.5% is the company’s contribution and 48.5% is the IFAD grant.

The agricultural technique necessary for agricultural works in the system of conservation agriculture was acquired from the IFAD resources.



“The purchase of agricultural machinery with the participation of IFAD was welcome for us in order to ensure conservation tillage technologies (CTT). Starting with 2018, thanks to these machines, we have managed to expand our areas with CTT up to 48 ha, integrated in the circuit of conservation agriculture”, mentions the leader of „Agrored L.V” Ltd .

In order to ensure the successful technological process, for the demonstration and control plots, the crop rotation of 4 crops was planned for the period 2017-2020: corn, sunflower, autumn wheat and soybean. The cultivation of the crops took place in accordance with the determined crop rotation, the parameters were established in the maps and technological sheets prepared by the experts.

Cost optimization was done from the following sources and activities:

- Reducing the number of agricultural works;
- Reducing the amount of fertilizers and protection;
- Reducing the employee cost;
- Reducing wear and tear of agricultural machinery;
- Reducing the need to take large loans to buy inputs;
- The possibility to switch to organic farming, which means a 30-40% higher price.

The farmer says that due to the exploitation of agricultural machinery in the system of conservation agriculture, the following positive effects were registered:

- reducing fuel consumption by 30%;
- reducing the number of mechanized operations, due to the simultaneous execution (combining several operations in a single work);
- reducing the degree of wear of agricultural machinery;
- more rational and efficient use of production factors.

“No doubt – the soil has begun to live, there are many earthworms. Plants feel much more comfortable during periods of prolonged drought. I believe that conservation agriculture is

that lifeline that allows us to manage the soil. For farmers, straw is also considered a harvest, the organic residues belong to the soil, minimum intervention, minimum soil compaction and the result is visible very quickly, starting with the year 3-4”, underlines Leonid Țilea.

Farmers wishing to switch to this system should know that the application of their own innovations and experiments to modernize technology in CA refers to minimum interventions, minimizing the number of field entries with equipment and mechanisms, patience and a lot of experience. All

cereal crops feel comfortable in the conservation tillage system, it only must be understood that in this system there are no trifles, all things are important.



Agricultural equipment for conservation agriculture



No-till seed drill

*“For the five years of implementation we have collaborated with many farmers passionate about this type of agriculture. We can mention the experts hired by IFAD, the collaborators of ISPPCCC” Selection”, guests from abroad. Through field presentations and seminars we managed to share our experience and learn new things. The greatest satisfaction was the presence of young people studying the basics of agronomic sciences at the Agricultural College from Brătușeni – this means that a new generation is growing responsible for the future of this country”, says Leonid Țilea.*The future objectives of the enterprise refer in particular to: the continuous modernization of conservation technologies by applying existing experiments and innovations, the expansion of cultivated areas with the application of conservative technologies, increasing the number of technical units, forming a team that would provide services to farmers in the region who want to practice this technology.

P.H. „Maria Darii”

Development can occur when we make our own efforts, but when there is support, similar to that from IFAD, the pace of development is faster.

Maria Darii is a brave lady from Drochia district, who, being supported by her husband, managed to found and develop “Maria Darii” peasant household. The company was founded in 2006 and manages 31 hectares, of which 15 ha in the ecological circuit and one ha of growing vegetables in greenhouses. The household is registered as an entity of ecological agricultural production, confirmed by the Certificate issued by the Certification Body of ecological products of the LLC “Eco-Certificate”.

„Our entity specializes in the production of vegetables in the open field and in protected field, but to maintain the crop rotation we grow winter wheat, corn, sunflower, soybeans, beans. We are what we eat and breathe and, therefore, we increase quality production for our consumers and for those outside the country, and we offer children a healthier production”, says Maria Darii.



General view of the farm shop's entrance

The company has been in the organic circuit since 2012 and was certified in 2015. The incentive to move to organic production has been the care for future generations and the market demand for harmless products. In addition, the producers delight their grandchildren with organically produced vegetables and in their honor they founded an agricultural store which they called “Grandparents’ Garden”.

“The transition to organic production has given us a strong motivation for a production model in harmony with the laws of nature, the protection of the ecological environment, the health of the agro-system and of the consumers. Greenhouse and certified organic vegetable production is in high demand on the local market. In the region, where we live, we are well known and respected. No additional financial investment was required to switch to organic production, except to attract additional employees to provide manual labor. In organic produc-



Getting to know the cultivation process

tion, especially in vegetables production, a large part of the work is not possible to perform in a mechanized way”, mentions the entrepreneur.

The household obtained a grant from IFAD to purchase a cultivator to work between rows in the weed crops, a combine for the total cultivation of the soil before sowing, a sprinkler, a shredder and an electric pump to pump water for the irrigation of vegetable crops.

“Together with our partners, IFAD, we have identified two plots, demonstrative and control ones, to implement the practices in the domain of organic farming and continuous training of agricultural producers who implement or want to implement the principles of this type of agriculture. Both plots have an area of 2.8 ha each. During the three-year period, records of technological works, costs and production were recorded on both lands. We obtained the expected results. The economic efficiency of organic production is higher than the conventional one”, informs Maria Darii.

The head of the household says that the founding of the Farmer Field School (FFS) within the agricultural household, allowed to reduce to zero the use of synthetic forms of fertilizers, pesticides, stimulants, growth regulators, hormones and antibiotics. The company received advice and information from IFAD. *“In organic farming, tillage is traditionally carried out with the application of plow, harrow, cultivator, chisel, combine, cutter, etc., which contribute to the destruction of weeds in vegetation or in the process of emergence, through basic works, bed preparation works, germination and maintenance work. Compliance with agrotechnical requirements for the execution of soil works has contributed to water retention in the soil, ensuring mobility and accessibility of nutrients. The uniform and rapid emergence of the crops shortens the period in which the pathogens can attack the plants in the germination phase, at the same time, influencing to a great extent the formation of the healthy flora”, said Maria Darii.*

Thanks to the project, the participants in the seminars organized by the company got necessary knowledge in the field of organic farming. Residents of Drochia district have the opportunity to purchase organic produce from the region. The spread of FFS's results obtained within the household will have the impact of increasing vegetable production opportunities in those areas.

During the years 2017-2020, 8 theoretical-practical trainings were organized, within which the producers from the district had individual access to the plot, and the total number of participants was about 450 agricultural producers.



Presentation of the demonstration plot

Since 2017, P.H. "Maria Darii" is a member of the Public Association "EcoPartener", through which we promote and support all those who want to initiate or move to organic production. Since 2020, the entity has concluded a collaboration agreement with WeTrade for testing and applying organic fertilizers and plant protection products produced in Ukraine. This collaboration will be an opportunity for the household to increase the quality of the production process within the entity.



Organizing seminars within FFS

"We believe that development can occur if we make efforts, but when there is additional support, similar to that of IFAD, the pace of development of the enterprise becomes faster. The increase of the areas and the number of people who want to practice organic farming is not determined by economic impediments, but by the mentality of the people. From the discussions with seminar participants we have found out that most of them want economic results at the moment, without being aware of the long-term impact", underlines Maria Darii

For the coming years, the farm intends to expand the areas with organic production and to set up a poultry farm for meat and eggs.

The entrepreneur considers that organic production has future in the Republic of Moldova, because agricultural producers are interested to obtain production of high quality.



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7. Questionnaire elaborated by „Golden Grapes” Ltd.
8. Questionnaire elaborated by „Agrored LV” Ltd.
9. Questionnaire elaborated by Institute of Pedology, Agrochemistry and Soil Protection „N. Dimo”
10. Questionnaire elaborated by P.H. „Maria Darii”

