



ITFARM

IT for Interconnection of Social, Economic and Environmental Aspects in Agribusiness

Part 1. Introduction and profile of the participants (Questions in the part: “Enterprise information”)

In Hungary we reached 3 companies which are connected to the agricultural ICT sector. These companies are the following:

1. Farmgép Ltd. – manufacturer and trader company

This company is based in Debrecen city in Hungary. FARMGÉP Kft. Was established on December 30, 1991, with the reorganization of the Debrecen Field Company, which was one of the largest manufacturers of plant protection, dressing and special purpose agricultural machinery in Central Europe. Our company was established from the development department of the former large company.

Innovation has been continuous since 1991, with their machines appearing at all major fairs and exhibitions, which have always been adapted to domestic and Western European needs.

Today, the company has a full range, from fields to orchards and vineyards, from golf course-sized sprayers to 6,000-liter automated field sprayers.

2. Axiál – trader company

AXIÁL Kft. Is one of the market leading companies in Hungary. Its activities includes the distribution of spare parts, new and used agricultural, construction and material handling equipment, as well as the provision of service and support services. The company currently has 19 locations in the country to serve its customers to the highest possible standard.

3. Senit Ltd. – Okosfarm – service provider in agriculture

Senit Ltd. has been operating in virtually all fields of economy, primarily in industrial sectors, for over a decade. They design, implement and operate IT, weak-current and security systems. When building their systems, the primary focus has always been customer-oriented design and high technical quality.

Part 2. Results

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Result 1. Current situation of ICT agro-Techno input suppliers (Questions in the part “Enterprise current situation” Q1-Q10)

The company's main activities are nearly covering all the sectors mentioned in the questionnaire. The Farmgép Ltd. is an exception because their machines are not designed for livestock, more to crops and horticulture. As a manufacturer the company's main products are plant protection machines and services. In addition to their own products manufactured in series, they pay special attention to individual developments and design such as: Plot sprayers used for chemical experiments, laboratory testing equipment; PLC-controlled application equipment for mounting on a carrier vehicle. The Senit Ltd. created an agriculture specialised department called Okosfarm in 2013 – it means SmartFarm. They carry out development, installation and operation of our systems and provide training services – which getting more and more important for farms, agricultural companies. Their services include the implementation of building and technology monitoring, automation and decision support based on precision farming. They have developed and continuously improved the proprietary monitoring system and measuring equipment, tailored to the needs of agricultural undertakings. They cover all types of activities: cattle, pig, poultry, sheep farming; food industry, farm monitoring, crop production. Axiál Ltd. besides its trader activities provide courses for machine users on how to use the new types of machines.

The main clients are large farmers for all the three companies: 80%

In the case of Axiál Ltd. distributors at lower levels also represent a great percentage but not as much as large farmers.

Their clients are mainly located at national level (70%, but they represent themselves on international level also (20%).

Regarding the impact of ICT revolution all the three companies mentioned that the effects are significantly positive because of course their activities are more appreciated and needed on the market thanks to the fast spread of ICT technologies and need for precision technologies for farms to be able to keep their position.



Result 2. Identify and understand current and future suitable technologies for EU precision agricultural farms (Questions in the part “current and future suitable technologies for EU precision agricultural farms”, Q11-Q16)

The companies offer a wide range of ICT technologies for the farmers:

Grass yield monitoring; Animal behavior; Animal health and welfare; Feed management; Weight management; Automatic milking systems; Field mapping with GIS; Yield monitor and data analysis; Seeding management tools

The order of the obstacles of buying and using ICT technologies for farmers are the following:

- High capital investment – farmers in general can't afford to buy expensive technologies without any loans or support
- Return on investment – It is important to calculate the return and for this the size of the farm is quite important
- Complicated use – sometimes farmers are scared of new tools and think it is complicated to use these but
- The need for qualified staff – at least young employees is required for the easier implementation of new systems
- Short lifespan of new technologies – thanks to the fast development of precision technologies there will be always newer and newer ones and it can force the potential buyer to wait until the development slows down
- Legal issues – it was not highlighted that much

In the future the direction would be more focused on the sustainability and green production so the tools would develop further to be more environment-friendly. The development would also try to reach the balance of the costs and return of investment to encourage smaller farmers to buy and use precision technologies.



Result 3. Technology training programmes on ICT for precision agriculture employees. This part includes two sections 1) Training for clients (farmers), Q17-Q29 and 2) Training for enterprise' employees, Q30-Q43.

Trainings are provided by the companies mainly as 1- or 2-day trainings which are held by the organization itself or the suppliers. These are mainly held on the field with that machine, technology which was purchased by the farmers, producer – so mainly connected to the sold product. Sometimes they organize trainings as campaigns to show a new technology, solution they organize product introducing “trainings” for possible buyers.

For example, Axiál Ltd. offers 1–2-day trainings for adults machine-operators. But Okosfarm (SmartFarm) has trainings related to the sold product and the implementation of it.

Result 4. Financial support programmes for ICT development at suppliers' level Questions from Q44 to Q49.

Especially for suppliers there are no direct financial support programs. The programs are mainly for farmers who would like to develop their precision technologies or would like to step on the path of digitalization and precision technologies in their own production activities.

The Axiál Ltd. Provides financial support and consulting opportunities customers who purchase machines.

Result 5. National and international legal/regulations/policy on new ICT technologies applied in agro sector. Questions from Q50-Q51.

The companies mentioned the impact on international level, European union level the green digital transformation policy which reaches out for agri-food sectors. In Hungary among the players of the ICT sector in agriculture know the Digital Welfare Program which

aims the agriculture sector in Hungary with direct actions in order to reach a higher-level of digitalization in the sector until 2022. This Strategy involved activities related to education – in high-school level and adult training also; development of high-level education, in universities, etc.



Conclusions:

These 3 companies cover a wide-range of activities in the framework of precision agriculture in Hungary and they are well-known and successful. Their development is still ongoing thanks to the high demand for digital tools and precision technologies from the agrarian sector. It is clear that these technologies in Hungary are mainly for bigger farms and companies because small farmers are not able to invest in technologies by themselves. There are more and more similar companies in Hungary which support the movement of digitalization in agriculture and the competition on the market encourages the companies to keep on with the development and implementation of new technologies.

The development of digital skills of farmers, producers is still a strong need in order to reach a more digitalized thus sustainable agriculture production.

Recommendations:

Our recommendations are related to the advertisement and marketing of the companies activities. Regarding their information shared on their websites and social media platforms their. Another important step would be to cooperate closer with agriculture schools and develop together programs for students on precision agriculture and digital tools used in production. To engage youth in agriculture a promotion campaign would be also useful with the cooperation of such companies to reach young people and encourage them to choose agrarian career.

The companies would support some kind of policy which would encourage big-size farms to use precision technologies through their activities because this could be a key element for stepping on the path of sustainable agriculture.

