Characteristics of fruit producing enterprises according to the data of farms taking part in the test farm system[1]

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Summary: Fruit farming plays an important role within the Hungarian agriculture. The climatic conditions of the country make it possible to produce 20 temperate-zone fruit species, 14–15 of which are economically significant. The weight of the sector is high relative to the immobilised land, it is important in the field of employment and holding of rural population.
I examined the enterprise form, production size, revenues and profit of farms dealing with fruit production relying on the data of the agricultural test farm system of 1999. The proportion of croppers and entrepreneurs is significant among fruit producers. Their revenue realising ability is low, which depends on the production size too. But the polarisation of these farmers has started and a new level is being formed that is considerable from the viewpoint of value production.

Introduction

Similarly to other sectors of agriculture Hungarian fruit production suffered a significant fallback because of the socio-economic changes of Hungary. The output and the level of production declined to the half of the 80s. The proportion of fruit production is relatively high within agricultural production, which shows its importance. Apple sector is determinant, its proportion is 57 to 59 percent within fruit production. The following data also confirm its significance. The amount of apple was between 380 and 480 thousand tons in the past few years. Unfortunately a small rate of it was for direct consumption or was exported *(Erdészné,* 1998). The major part of output was processed in food industry, mainly as apple juice (88% in 1999) and to some extent as canning industry products and dried products. The Hungarian fresh apple export decreased from the 396 thousand tons since 1987. It was 34.000 thousand tons in 1995, 17.000 thousand in 1997 and 5398 tons in 1999, which did not exceed the quantity of imports (7171 t).

The main difficulties of fruit production are as follows

- The private ownership of horticulture is subdivided (0.8 ha/owner) just like plantation structure. As a result of the orderless ownership and the lack of capital there was hardly any planting for several years. The rotation necessary for the production to meet the changed quality requirements and suitable for the integrated production technologies which was missing. The rate of farms with intensive horticulture is very low, only 1.9% [AMÖ, KSH, 2000].
- The lack of capital and resources does not only omit planting, but causes a too low level of inputs, which is conjoined with lack of expertise and technological abandon. It causes lower yields, higher uncertainty in yield, thus reduces the profit of producers.
- The lack of irrigation is a further negative consequence of the lack of capital and resources (10–15% of fruit plantations are irrigated).
- Because of the subdivided farm structure producers with small-scale production also have marketing problems. The proportion of super and hypermarkets in the field of fruit and vegetables is increasing (from the 3–4% of the 80s to 17% in 1998). The tempo of this process is undiminished. Buyers make contracts only with suppliers, who offer large quantities of homogeneous quality products packed properly. The majority of producers cannot meet these requirements individually.

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- Low yields and input levels, omitted planting and development resulted in a low profitability level changing year by year.
- The lack of information systems, market research and marketing activities of producers had negative consequence that neither the producers nor the government had enough information about the actual production, marketing processes and long-term tendencies. The lack of organisation is still imminent. As suitable information channels were not formed, the development of a test farm system may improve the conditions.
- The lack of post harvest activities is one of the heaviest problems of the Hungarian fruit sector. It impairs marketing capabilities (exports, chain stores). This is the result of the changes in agriculture and the lack of capital and resources.
- The whole product chain is unorganized. Former production and integration relations that helped especially small-scale production based on factory farms disappeared (subsidiary husbandry, part time and other forms of production). At the same time producers lost their integration network, which helped the purchase of raw materials and chemicals and which gave technical and mechanical aid in chemicalising, which took part in buying up, selling, manipulating, storing and processing. Organisation that could give the institutional background have not been formed yet *(Takács–György, Takács & Kassai,* 2000).

Antecedents of the research, goals

When we examined the situation of producers of horticulture and those dealing with fruit production within horticulture, we found it necessary to examine the evolution of the situation and profitability of producers beyond the model examinations. The following evaluation is the product of this examination.

As many as 1,295 farms took part in the test farm system in 1999. 134 of them dealt with fruit production[2], which is 10.35% of the farms involved. We intended to state, what is the organisational form of enterprises dealing primarily with horticulture and fruit production within horticulture, what is the value-producing-capacity of the different size categories, what is their fixed asset level, what is their profit and we tried to find the relationship between the legal form and those mentioned above. This research is the basis for the modelling of the viable size of fruit producing enterprises. During the research the results motivated to examine if there is a relationship between the sizes of the enterprises of private people, their profitability and taxation.

The examination includes only the data of 1999, since few fruit producing farms took part in the test farm system in the previous years. Therefore we were unable to examine longer periods because of the lack of data.

Main taxational rules for enterprises (private people) dealing with agricultural production

I include the taxation laws in force on private people dealing with horticulture because 109 private people were in the examined sample (cropper, private entrepreneur), which is 81.3% of the whole sample. Examining the revenue and profit data declared and the sizes of the farms, we may infer that the relatively low level of revenues and profit is the outcome of the taxation laws and preferences linked with certain income limits.

In what follows, we shortly need to review the taxation laws in force on agricultural enterprises.

- Partnerships: according to the law on partnerships the corrected pre tax profit is the base, 18% of which is the tax.
- Private entity dealing with agricultural production under the force of personal income tax:

- Private entrepreneur: The extent of the private entrepreneurs' personal income tax is 18% and below a certain proportion of the entrepreneur's dividend base 20%, above it 35% has to be paid in addition. In case of flat taxation the profit is 6% of the receipts from the selling of animals and animal products, while in case of other receipts received as cropper's receipt it is 15%. Flat tax is 12.5% of the profit calculated this way below HUF 200,000, 25% between HUF 200,000 and 600,000. In case of plant production and horticulture this preference can be chosen in case of receipts below HUF 4 million as a whole, it is a significant easement for the producers.
- Cropper: The incomes from production are assembled incomes. The tax base is calculated according to the general dictated profit calculation (10% of the income is cost without certification) or according to the factual cost accounting. Croppers may have up to HUF 100,000 TAX preference for their activities. If the income does not exceed HUF 250,000 a year, he (she) does not have to keep records (preference for not reaching the income limit).

These special rules of the taxation system affect the information supplied by the producers.

Distribution of the form of enterprise and the land cultivated

According to the data of the general agricultural census of the year 2000, 960 thousand homesteads reached farming size. 24,988 were private entrepreneurs, 3,570 partnerships without legal entity (deposit partnership, general partnership),

[2] Horticultural (in what follows fruit producing) enterprises are the farms 60% of gross margon of which is the following activities: open ground and covered olericulture, open ground flower and ornamental production, covered flower and ornamental production, fruit production, wine-growing.

7,429 partnerships with legal entity (4,904 limited) and 1,844 co-operatives. The majority of the remaining farms reaching farming size were croppers. The distribution of the enterprise form of the examined farms was: 53.7% cropper, 27.6% private entrepreneur, 4.5% deposit partnership, 6.0% limited company, 3.7% co-operative, 4.5% joint farm[3]. The distribution of all farms taking part in the test farm system was the following: 45.8% cropper, 33.5% private entrepreneur, 2.4% deposit partnership, 7.0% limited company, 7.5% co-operative, 2.7% joint farm. The sample was formed according to the weight of horticulture, the rate of gross margin[4] (rate greater than 60%).

The land cultivated by the examined farms was almost 6.000 ha. Croppers (72 people) cultivated 11.2% of the land (670 ha), the average farm size was 9.31 ha. Land used by private entrepreneurs (37 people) was 22.3% of the land (1,333 ha), which is 54 ha on average. 6 deposit partnerships were included in the sample, they worked on 324 ha, which is 5.4% of the land, 8 limited companies cultivated 9.1% of the land, the average farm size was 68 ha. The land cultivated by the 5 co-operatives was 50.1% of the total land (3,004 ha), the average farm size was 600 ha. 6 joint farms used 1.1% of the land. I did not examine this category.

Examining not only the land cultivated, but also the relative asset value, net turnover, profit or loss per hectare as profit category and turnover per hectare from fruit production, I received the following results *(Table 1)*:

- Private entrepreneurs had a low turnover relative to what is expected from horticulture (194.3 thousand HUF/ha). Deposit partnerships had a similarly low result (175.7 thousand HUF/ha), because of the low number of the sample and that 70.4% of the land belonged to two not profitable deposit partnerships.
- The average size in case of each enterprise form is close to or greater than the viable farm size according to theoretical calculations, which is 7 to 8 hectares of intensive plantation.
- Examining the farms according to size categories it can be stated that only croppers belonged to the smallest size category, while one private entrepreneur and three co-operatives were in the largest category *(Table 2)*. The average size of the croppers (9.1 ha) is favourable, 4 of them (5.6%) cultivate more than 50 ha, which is a large size in case of fruit producing enterprises. 21.6% of private entrepreneurs exceeded this size (8 farms). 47.8% (11 farms) of partnerships were in this size category *(Table 3)*.

The relationship between turnover and enterprise form in fruit production

In the following I examined the farms. The majority of the turnover of which was from fruit production. The number of examined farms thus decreased to 70. 35 croppers (50%), 19 entrepreneurs (27.1%), 3 deposit partnerships (4.3%), 4 limited companies (5.7%), 5 co-operatives (7.1%) and 4 other enterprises (5.7%) were in the sample.

Farms were categorised according to their turnover *(Table 4)*. 11.4% of the examined 70 farms had less than HUF 500,000 turnover. 12 croppers and 6 entrepreneurs

Table 1 The relative size, turnover, profit, and asset data of fruit producing enterprises grouped by the form of enterprise, 1999

	Average size ha/farm	Relative asset value thousand HUF/ha	Relative turnover thousand HUF/ha	Relative turnover from fruit production[5] thousand HUF/ha	Relative profit thousand HUF/ha
Cropper	9.14	787.7	361.8	212.2	27.2
Private entrepreneur	36.91	609.1	194.3	89.2	42.2
Deposit partnership	54.00	532.3	175.7	52.5	–37.1
Limited company	67.91	1.693.2	348.7	212.1	50.6
Co-operative	600.89	392.0	176.7	102.2	7.5
Joint farm	14.02	841.4	776.3	189.5	42.9

Table 2 The numbers of fruit producing enterprises in size-categories grouped by the form of enterprise, 1999

	< 1 ha	1.01–5 ha	5.01–10 ha	10.01–50 ha	50,01–300 ha	300.01 < ha	Total piece
Cropper	7	27	21	13	4	0	72
Private entrepreneur	0	5	6	18	7	1	37
Deposit partnership	0	1	0	4	1	0	6
Limited company	0	1	0	2	5	0	8
Co-operative	0	0	0	0	2	3	5
Joint farm	0	1	2	3	0	0	6
Total	7	35	29	40	19	4	134

[3] Joint farm is a farm managed by two or more croppers, entrepreneurs, etc.

[4] Standard gross margin (SGM) is the average gross annual profit quantity that means the following size categories: SGM of a small farm is less then HUF 1 million; it is between HUF 1 million and 3 million in case od a medium sized farm and exceeds 3 million in case of a large farm.

[5] The relative turnover values of fruit production are not equivalent to the real values because of the lack of the breakdown to cultivation types, thus these data could not be evaluated

Table 3 The distribution of fruit producing enterprises in size-categories grouped by the form of enterprise, 1999

percent

	< 1	1.01–5	5.01–10	10.01–50	50.01– 300	300.1 <	Total
Cropper	9.7	37.5	29.2	18.1	5.6	0.0	100.0
Private entrepreneur	0.0	13.5	16.2	48.6	18.9	2.7	100.0
Deposit partnership	0.0	16.7	0.0	66.7	16.7	0.0	100.0
Limited company	0.0	12.5	0.0	25.0	62.5	0.0	100.0
Other enterprise	0.0	0.0	0.0	0.0	40.0	60.0	100.0
Unidentified enterprise	0.0	16.7	33.3	50.0	0.0	0.0	100.0
Total	5.2	26.1	21.6	29.9	14.2	3.0	100.

Table 4 The distribution of turnover from fruit production by the form of enterprise, 1999

percent

Turnover (thousand HUF)	cropper	entrepreneur	deposit partnership	limited company	co-operative	joint farm	total
<500	17.1	5.3	33.3	0.0	0.0	0.0	11.4
500–1.500	34.4	31.6	0.0	0.0	0.0	0.0	25.7
1.500–4.000	31.4	26.3	0.0	0.0	20.2	25.0	25.7
4.000–10.000	2.9	31.6	33.3	25.0	0.0	75.0	17.1
>10.000	14.3	5.3	33.3	75.0	80.0	0.0	20.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

(25.7%) were between HUF 500–1,500 thousand. 11 croppers, 5 entrepreneurs, 1 co-operative and 1 other enterprise were in the HUF 1,500–4,000 thousand category (25.7 %). 12 farms had a turnover between HUF 4 million and 10 million (17.2%), 1 cropper and 6 entrepreneurs were among them. 20% of farms had a turnover greater than HUF 10 million.

The data show that polarisation has started among croppers. While the turnover of the majority does not exceed the 4 million limit of the tax law for small scale production, 5 producers had economically significant turnover. But it is likely that many of the croppers try not to exceed the above-mentioned limit turnover. The average size of plantation (9.31 ha) makes it possible to have larger turnover. In case of a medium apple yield (22 t/ha) and medium price (22 Ft/kg) the turnover from 9 hectares would be at least HUF 4,356 thousand.

Croppers not exceeding HUF 500,000 work on less than 10 hectares. Among the five croppers exceeding HUF 10 million there was one who had 28.9 million from 8 ha of fruit production, while the one farming on the largest land (61.8 ha) had a turnover of HUF 19.7 million.

The majority of entrepreneurs (63.2% 12 people) exceeded the 4 million limit. One of them, who worked on 3.5 ha had a very large turnover (63.8 million), which is a 51 percent profit margin on sales. That fact that there are both entrepreneurs and croppers among those exceeding HUF 10 million turnover shows, that a producer layer is being formed, that is really a participant of the economy if we look at both turnover and the size of land used. They have a chance to create the circumstances necessary for the long term farming (since the declared and used asset value is close to or exceeding HUF 10 million).

3 of the 4 limited companies and 4 of the 5 co-operatives realised a turnover substantially exceeding HUF 10 million. The land cultivated by limited companies ranged from 14 hectares to 131 hectares, their majority produced other field crops too. While only a small proportion of limited companies was from fruit production, in case of 74.3% of croppers (26 people) and 68.4% of entrepreneurs (13 people) turnover from fruit production was more than 50% of total turnover. Croppers and entrepreneurs typically have simple production structure, while partnerships have a variegated, diverse structure.

According to the data it can be stated that almost half of the examined farms did not reach a turnover that could be expected from their land.

Relationship between profitability and form of enterprise

I tried to characterise the fruit producing farms of the sample on the basis of their retained profit in the different forms of enterprises and size categories.

28.6% (20) of the 70 fruit producing farms showed a deficit in the period examined. 41.4% (29) retained a profit less than HUF 1 million, 22.9% (16) were between HUF 1 million and 5 million, 7.1% (5) exceeded 5 million.

- 22.9% (8) of croppers, 47.4% (9 persons) of entrepreneurs and 18.8% (3) of partnerships had a negative profit. Low asset level can be one of the reasons for high loss in case of the first two enterprise forms.
- 21 croppers (60%) and 4 entrepreneurs (21.1%) had a profit between HUF 0 and 1 million. 4 of the partnerships belonged to this category, 25% of all.
- 4 croppers (11.4%), 5 entrepreneurs (26.3%), and 6 partnerships (37.5%) had a profit between HUF 1 million and 5 million.
- Profits of 2 croppers (5.7%), 1 entrepreneur (5.2%) and 2 partnerships (12.5%) exceeded HUF 5 million.

Examining the scale of farming of the partnerships it can be stated that fruit producing farms were not able to produce satisfactory profit in 1999, thus they had no or only limited resources for development. At the same time it is advantageous that a layer appeared in both croppers and entrepreneurs, which has a significant profit, that secures the living of the family and though restrained it is a basis for the development of the farm.

Relationship between form, size, turnover, and profit of the enterprise

I emphasise the statements of the conjunct examination of form, size categories, turnover and profit of enterprises that can be related to the rules of income taxation and thus the choice of the form of enterprise.

- The turnover of croppers generally must not exceed the turnover limit determined by income tax for the agricultural small producer status (HUF 4 million). 3 of the croppers producing on less than 10 hectares exceeded HUF 4 million. 4 croppers worked on more than 50 ha. 2 producers of them did not reach the limit of small producers (2.6 and 2.3 million). It means a very low profit level relative to the farm size. With such farm size even in plant production a greater turnover can be reached (the turnover is HUF 5.5 million in case of 50 ha and 5 t/ha yield if the price is 22,000 HUF/t) with producing winster wheat.

- The revenue declared by croppers in case of the majority is not or only hardly enough for a living after deducting costs and it is not a source of development.

- In case of 3 entrepreneurs with more than 50 ha the data showed no reportable producing activity. The average HUF 300,000 turnover per hectare is not a high value for horticulture. But an entrepreneur had HUF 579 thousand profit from the HUF 1,116 thousand turnover on 57.2 hectares. This 51.5% profit margin on sales meant 44.1% profit margin on assets, which greatly exceeds the average of the sector. It indicates that satisfactory farming can be performed in this enterprise form too.

Conclusions

In the present phase of the research on the basis of the data available it can be stated that the proportion of croppers and entrepreneurs is significant among horticultural farms providing data (81.3%, 109 people). The land they cultivated is 2,036 hectares, which is 34.6 percent of total area. The increase and concentration of farm size and enterprising nature of farming is shown by the fact that while the average farm size of croppers is 9.14 ha, it is 36.91 ha in case of entrepreneurs. The level of fixed assets was HUF 682,981 per ha in case of entrepreneurs, which exceeded the values of the deposit partnerships (6) and co-operatives involved (5). Entrepreneurs had 50% more profit than croppers, but their turnover per hectare was less than half of the croppers.

The abilities that are in the rules (especially taxation) in force to hide profit made it difficult to compare and evaluate data in certain categories. But it can be seen that croppers and entrepreneurs are polarised. All of the croppers that are under HUF 500 thousand cultivate less than 10 hectares, but at the same time 5 croppers had a turnover of more than HUF 10 million (one of them reached 28.9 million on 8 hectares, only from fruit production). 63.4% of the 19 entrepreneurs of the sample were below the 4 million limit (which is important from the viewpoint of taxation). The question arises: is it worth dealing with this activity in the long run in case of the presently shown turnover and profit, or not? If the entrepreneur as private person and his/her family does not have other incomes, than such a low revenue (given the costs of production) is not enough to secure the income necessary for a living (if the turnover shown is true). It is likely that the turnover of the whole farm is greater and the deficiency can be found in the documentation of the financial side of the production process. But the turnover of 7 entrepreneurs exceeded HUF 4 million, the land cultivated by them was mainly more than 10 ha the produced value and profit show that they perform real farming and create value.

As a private person dealing with horticulture in the sample it can be supposed that there is a difference between the data declared and the really accomplished (accomplishable) values among the reasons there are legal and illegal techniques to reduce tax. It must be stated that there are croppers among fruit producing farmers too, who make use of the possibility that below a certain level of turnover no records have to be kept, they do not show receipts, thus they do not have to pay tax. It reveals the necessity that there should be a uniform documentation requirement for each form of enterprise.

The performance of the research will be the examination of the changes of fruit producing farms in time and the examination of the other horticultural farms (open ground and covered olericulture, flower and ornamental production, viticulture). Beyond the already examined economic and production data the calculation of further profitability indices would give a more detailed picture of the participants of the sector.

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