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CENTRE OF AGRARIAN SCIENCES
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DOCTORAL SCHOOL OF INTERDISCIPLINARY

SOCIAL AND AGRICULTURAL SCIENCES

Director: **Prof. Gábor Szabó DSc**

Ph.D. Thesis

STUDIES ON INVESTMENT ECONOMICS OF AGRARIAN

ENTERPRISES IN SOME PLANT CULTIVATION BRANCHES

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2007

1. AIMS OF RESEARCH

The investments have a double role in the national economy: firstly they are included among the costs, thus they influence the aggregated demand and through it the release and the employment. Secondly in the course of accumulation of capital they increase the potential release, thus the economical development can be accelerated by them. The first effect occurs on short term, while the second one on the long term.

Concerning the world agriculture, an eye-catching differentiation can be observed in the level of development of different countries, groups of countries and continents. The food supply of the continuously increasing population is a more and more serious problem for the countries of the world. The production of developed countries, which are characterized by intensive agriculture, financially supported production and high technical level, resulted in surplus production, while the underdeveloped countries, where the investments and the technical level are on a very low level, struggle with the difficulties of food supply. The world market does not level the differences of development, because the underdeveloped countries do not have such sources which would ensure the increase of level of food supply, and the rich countries want firstly to sell their products and not the production equipment and technology. Therefore I was interested first of all in the investments as well as I chose this field to be my main research topic, because the real situation of agriculture can be determined accurately through the study of investments.

The studies of investment economics of irrigation and grain storage offer information on some questions of efficiency and competitiveness as well. Besides genetics, growing technology, nutrient supply and plant cultivation the irrigation is a key factor from point of view of plant cultivation as a biological process for the utilization of the cropland. In crop production the biggest difficulty is the marketing. In the branch itself the development of grain storage makes possible the improvement of efficiency and competitiveness by creating the background for the up-to-date cereal marketing. My aim is to demonstrate the characteristics of capital efficiency of some investments carried out in the last one and a half decades within the changed internal and external conditions. Another aim of my

studies is to describe the methods of investment economics applied in the agriculture, and to elaborate some utilizable knowledge for the practice by the help of concrete pilot plant tests.

I have decided to deal with development possibilities of agricultural enterprises and among them with those involved also in plant cultivation in Békés County and economical analyses of their investments. I have chosen this topic because the investments are extremely important from point of view of development of a branch, a region or a country. Secondly the scale of investments as well as its change demonstrate the income producing ability of the given branch and through the financial support its importance and reputation within the national economy. Moreover the well-foundedness of investments offers information on the scientific and cultural standard of a nation as well as the treatment of the scarce resources in the given country.

Aim (I): to demonstrate the characteristics of capital efficiency of some investments carried out in the last one and a half decades within the changed internal and external conditions.

- **Hypothesis:** The decrease of power value of investments also interplays in the deterioration of position of
- **Method:** Review of technical literature
- **Thesis:** At present the dead money and the intellectual knowledge accumulated in the Hungarian agriculture can proceed only if there is no extraction of resources from the agricultural branch, and the investments serving the development are realized with the highest efficiency.

Aim (II): Studies of utilizability of methods of investment economics applied in the agriculture and elaboration of some utilizable knowledge for the practice by the help of concrete pilot plant tests.

- **Hypothesis:** Each applied method has advantages and disadvantages. How do they influence the statements?
- **Method:** *ex post analysis*
- **Thesis:** The applied methods have come to the agricultural use from the world of financial and industrial investments. By the use of these precise methods the index numbers of investment economics can be exactly demonstrated even for the further ten years, but in the reality there are several factors of uncertainty like the *calculative rate of interest*, or the

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distribution of precipitation, the *change of market factors* etc. which affect the production on a much higher level in spite of the accuracy of methods of examination.

Aim (III): The aim of the thesis is to find correlations between the factors determining the economics of agricultural investments.

- **Hypothesis**: Is it possible to make a priority order between the investment economics of the different branches?

- **Method**: on long term – examining only the plant cultivation branches; from the standpoint of general efficiency: comparison of application of different examination methods of investment economics.

- **Thesis:** In case of hybrid maize and fodder maize the very different marketing price determines the profitability. In the branch of winter wheat the high costs of water withdrawal and in all branches the high starting cash flow as well as its occasional support influence the results, while in the fodder maize and winter wheat branches the IRR values are not in the real ranges, thus the possible omission of calculative interest rate does not modify the results, i.e. the support of interest influences the calculated values only on a very low level. Of course all the values are valid only for the studied period of time and branches without generalization.

Aim (IV): I try to find the answer to the question if it is reasonable to forecast every year one by one or it is enough to calculate the average to get a usable result in case of a longer time series.

- **Hypothesis:** The application of simpler and more complicated methods is compared in the different branches and conclusions are made concerning their use in the different branches.

- **Method:** Use of several different methods and analyses of differences.

- **Thesis:** Besides use of average and annual evaluation methods it can be stated that the difference of the results of calculations based on the annual cash flow as well as the results coming from the average data depends on the scale of the starting cash flow and the volatility of cash flows. Therefore it is necessary to use the complicated cumulative methods, too. In case of stable cash flows and on a long term (which is not characteristic to plant cultivation) the simpler methods of averaging can also be applied. Because of the "year-effect" mainly influencing the cash flows of arable

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crop production it is useful to carry out the analyses with several different processes.

Aim (V): Elaboration of a method serving only for the investment analyses of irrigation (development of the corrected water productivity factor, CWF), and its practical tests.

- **Hypothesis:** The methods used for the agricultural investments had been elaborated for the evaluation of investments in the industrial and financial sectors. Is it available to elaborate analysing methods taking into consideration only the characteristics of agricultural investments?
- **Method:** Elaboration of formula CWF
- **Thesis:** The analysis carried out with the corrected water productivity factor (CWF) is thought to be a reliable method; however it can be applied exclusively in plant cultivation branches and irrigation analyses. Based on it you can rank the irrigation branches. This indicator expresses how many HUF yield increase will be reached as a result of 1 HUF cost of irrigation.

Aim (VI): Can the decrease of irrigated farming be approached from the side of missing investments?

- **Hypothesis:** There is a multi-factorial explanation of decrease of irrigated farming.
- **Method:** Multi-factorial analysis.
- **Thesis:** The irrigation as an agrotechnical intervention is profitable if all the other factors (soil tillage, nutrient supply, genetic bases, plant protection etc.) are available on the highest level.

Neither the general situation of the Hungarian agriculture nor the present events in the agrarian economics and politics are the matters of this work as the constantly changing system of financial supports and transfer of institutions do not have any retroactive influence on the economical analyses of investments. The questions of animal husbandry are also neglected in spite of the fact that there were fodder producing branches among the studied sectors. The studied time of investment economics is long and covers 25 years, and the present changes in the agrarian economics, which influence the investments, can be evaluated only later. The Hungarian national economy and in it the agriculture are changing, thus the supporting system of investments is also transforming.

Date base of the investigation

For the analyses of investment economics of irrigation the database of Ménesbirtok Share Company in Mezőhegyes, more exactly the analytics, ledger invoices, efficiency data and branch tables serving as a base for the ledger were used. The calculations of investment economics in grain storage are based on the data series of Május 1. Share Company in Battonya.

2. BACKGROUND AND APPLIED METHODS

2.1. Description of the most important previous researches and methods of research

There were several efforts to determine the notion of investment. The different researchers and research groups tried to determine it accurately because the topic of their examinations could be defined exactly by this way.

All the wordings are based on the fact that it is a single-minded human activity which serves the social development; more exactly it is a nature transforming activity of the society and later the transforming and developing activity of the society itself, which is an exteriorized form of the "social evolution". As a result it covers a vast immobilization of assets, competence, future prospects, abnegations and risks. The life of direct environment or "effect bearers" of an investment is also influenced to some extent by the future effects of the given investment. Finally on long term the totality of investments is able to change the future of societies or even that of the mankind. In such an understanding there is no "small or big investment", there is only an investment which is determinant under any circumstances, and it contributes to the formation of the future. Thus the investments have an outstanding role among the economic decisions. The really successful investments, i.e. the investment decisions, positively determining the future, constitute a complex system; therefore their scientific grounding is essential.

The responsibility of every capital owner (in the government or production sector or a private person) who risks their narrow resources for investment purposes is enormous. Therefore the calculations determining the economical decisions are extremely important. The investment decisions and the *ex ante* analyses take a sight on the parameters of a determined level embedded in the future, while the actual happenings of the time horizon react *ex post* on the decision makers and the effect bearers.

The reasons for the fallback of efficiency of agricultural investments are the following:

- Monetary and fiscal conditions
- Problems coming from the lack of income

- The effect of CAP reform to the development.

2.2. Description of methods of investment economics

The applicability and the adequacy of applied methods of examinations are different. It is based on the fact that these methods have been elaborated mostly for the studies of investments of other branches. The adaptation of the methods to the agriculture is not unequivocally successful, because the prediction of dependent variables characteristic to the specialities of the branch is difficult. It is difficult to quantify the synergies coming from the changes of weather, production technology, marketing, as well as political, macro-economical and world market changes and finally from the dynamic interference of these factors. The comparative analyses of the following examination methods together with some practical data offer the possibility of examination of differences between the individual methods as well.

Applied standard methods of analyses:

– rate of return,

– average profitability of the investment,

– present value,

– net present value,

– internal rate of return,

– profitability index.

The value of each index is determined by several processes i.e. the cumulative method, discounted operational cash flow, discounted amortization, annual cash flow values and average cash flow values, in total by about 16 different processes. The presently used methods of investment economics came to the agriculture from the world of financial and industrial investments. By the use of precise methods of analyses the indexes of economics of an agricultural investment can be demonstrated with a very high accuracy even for ten years ahead, but in the practice one can meet several elements of uncertainty like the calculative rate of interest or the distribution of precipitation, the changes in the market conditions etc., which affect the production on a much higher level in spite of the precise methods of analyses.

2.3. Determination of the corrected water productivity factor

In the investment economy analyses of lateral-line irrigation systems, besides the well-known methods, the influence of irrigation on covering contribution is studied by involving the water utilization and water productivity factors. The exchange of covering contribution per 1 HUF irrigation expense i.e. the direct economical effect of irrigation can be demonstrated by using the corrected water-productivity factor (CWF).

$$KVT = \frac{CI}{f.\ddot{o}.k.} \quad KVT = \frac{Ft/t/ha}{Ft/mm/ha},$$

where:

CI = income growth per hectare, i.e. the input side of operational cash flow,

siws = specific irrigation water supply, supply of irrigation water per hectare, the

output side of operation cash flow

2.4. Barriers determining the methodology

Except for the cash-flow the factors influencing the economics of investment have been described separately because of their importance and because of the risk and unreliability factors occurring in the course of elaboration of the future prospects. They are the following:

Effects of inflation on the analyses of investment economics:

- Place of inflation: "wrapped" in to the discount factor within the risk-free rate of interest.
- Instead of consumer price index the price index of capital goods is used.

Effects of amortization on the analyses of investment economics:

- Main rule: it can not be figured among the cash-flows!
- The depreciation and amortization are divergent.

Effects of calculative rate of interest on the analyses of investment economics:

Quantification of risk-free rate of interest:

Estimation, dilemma: - comparative return on the government annuity market, on the basis of calculation principles of capital expenses *or* by the help of the "average efficiency of capital".

Quantification of risk premium: country risk, foreign exchange risk, branch risk, business risk, forecast of inflation: 1 year expectable consumer

inflation (Sources: Hungarian National Bank - HNB, Research Institute of Economics – RIE, EIU). *Calculative rate of interest (k)% = Rate of interest of risk free investment % + risk premium%*

3. RESULTS OF STUDIES OF INVESTMENT ECONOMICS

3.1. Results of Studies on Investment Economics in Some Branches of Irrigated Plant Cultivation

The examinations of investment economics were carried out by standard methods described in the chapter of methodology: the present value, the net present value and the rate of return the internal rate of return and the profitability index were determined with several methods (with cumulated and average values), in total with 16 different processes.

For definition of calculative rate of interest the following correlation was applied:

Calculative rate of interest (k)% = Rate of interest of risk free investment % + risk premium.%

Definition of calculative rate of interest (k)% = 8,2% + 9,8% = 18%

(Because of use of database of several years the use of time premium factor was neglected.)

The most profitable arable crop production branch is the hybrid maize production. In the interest of more secure seed production and the increase of its yield the use of technology of irrigated production was started in 1995. The investment economics of the completed investment is shown hereunder.

The index of average profitability, the index of circulation velocity of investment goods, the index of circulation velocity of capital and the different indexes of rate of return are relevant if they participate in the comparison of ranking of exclusive investments. Concerning the ranking on the basis of profit per unit of capital investment among the three studied branches there is bigger result than one only in the hybrid maize production. Based on the data in the fodder maize and winter wheat sectors negative calculated value was received for each index because of the high starting cash flow of the investment. It does not mean that these sectors are not profitable (because they are really not deficient), but it means that in case if these branches should bear the costs of an actually carried out investment they could not fulfil this demand among the present conditions of returns.

The operational cash flow of the fodder maize and winter wheat branches is not able to cover the costs of irrigation, thus it cannot be compared to the starting

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cash flow of the investment. The irrigation of wheat is not recommended by the plant cultivation experts (partly because of utilization of winter precipitation and partly because there is a very low chance for drought during the growing season of wheat etc.), which can be confirmed from the side of economy as well. The studied company did not want to irrigate this plant, but to utilize its surplus capacity, and in highly arid years to save the crop by the help of irrigation. In both maize branches the irrigation has a very high importance because of preservation of viability of pollen if the temperature is over 30 °C in the period of tasseling. The interaction of soil cultivation, irrigation and fertilization is different in the droughty and the average precipitation years. In case of rational farming the irrigation has an outstanding role when the precipitation is on the minimum level. In such situations the generally used processes of evaluation of investment economics can be used for the analyses of the actual situation if the researcher applies several approaches and works with the necessary thoughtfulness. It can be stated that in arable crop production the investments of irrigation are profitable only in seed production and in case of actions carried out in the interest of crop safety.

Concerning the hybrid maize branch it can be stated that the switch to irrigated farming is obviously profitable. Studying the crop yields of hybrid maize in irrigated and non-irrigated farming it was found that in irrigated conditions the absolute dispersion of average crop yield of hybrid maize was 0.632 t ha^{-1}, while in non-irrigated conditions it was 0.656 t ha^{-1}, with relative dispersion of 22.5% and 32.7% respectively.

As it is demonstrated the absolute distribution of yields of irrigated farming is hardly higher than that of the non-irrigated farming (24 kg ha^{-1}), while the relative dispersions show 10% difference.

3.2. Economic Calculations of Investments of Grain Storage

The asymmetric income distribution among the participants of the branch is a serious problem within the cereals branch. The cereal producing enterprises struggling with the overproduction and the marketing get a very low income with very high risk. And the great majority of this income is realized through the supporting system. The enterprises owning storing facilities reach price-earnings with low risk, and – as a result of peculiarities of the isolated ownership structure

– it is not returned to the cereal producers, however because of specialities of the branch these enterprises have a negative operational cash flow during a longer period of the year. It can be stated that in this branch the ownership of storage facilities determines the income distribution on a high level.

In the economic analyses of capacity improvement of grain storage the standard evaluation methods were applied. The examinations were carried out on the basis of net cash flows of investments realized in different constructions or scenarios.

The analysed constructions or scenarios in which the net covering contribution is determined by comparative analyses are the following:

– direct marketing after the harvest;

– construction of a regional grain store by the help of non-refunding government support;

– building of own grain store using construction loans;

– warehouse storage and stock exchange marketing;

– marketing of grains by offering them for intervention purposes.

Comparing the two grain store constructing methods with the direct marketing after the harvest and the offering for intervention purposes as well as with the stock exchange marketing after warehouse storage it can be stated that the highest income can be collected from the intervention marketing in the present market conditions. The reason is the fairly high price ensured by the EU as well as the rather low warehouse costs. In the future especially in case of longer time periods the enterprisers should calculate with the modification and rearrangement of incomes because of the expectable changes in the subsidizing policy of the EU.

If it is possible one has to use market interest rates instead of the calculative interest rates, and the payment obligation of interest of debt service should be placed among the operational costs (differently from the main rule), as the supplementation of calculations made by the use of the main rule. There could be significant differences between the calculative rates of interest in the different scenarios. In my opinion besides the general methodological requirements the analyses should be carried out *in situ* i.e. by the use of actual data of the given facility included the concrete interests as well. By this way it is possible to

decrease the uncertainty factor concerning evaluation of the calculative rate of interest which is the most sensitive point in the analyses of investment economics.

The investment economics of grain storage can be highly influenced by the effects of future changes in the national grain production branch. In the interest of elimination of overproduction the decrease of intervention prices can be forecasted which may significantly rearrange the profitability of the branch.

4. NEW AND NOVELTY RESULTS

1./ Based on the analyses of dispersion of yields of irrigated farming it is obvious that the absolute dispersion of yields of irrigated farming is hardly higher than that of the non-irrigated farming, what means that the effect of irrigation on the product safety is not as significant as it was supposed. The inconsiderable difference (0.65 t ha^{-1} and 0.63 t ha^{-1}) (Annexes 1-2) based on the 25 years long series of data can be taken reliable.

2./ Supposing a competition situation and an existing limit of capital, when both the branches are competing for the money of the investors, the results of analyses showed that we have to settle upon the investments of grain storage. The ranking among the branch investments is based on the **indexes Mi-PV-NPV-IRR-PI**: the irrigation investment in the hybrid maize branch the rate of return is 1.14 years calculated with the static method, while calculated with the cumulative method it is one year, by discounting it is 2 years and by calculating with the amortization it is 0.52 year (Table 37). The improper choice of method results in fivefold difference, *ceteris paribus.* The calculation of net present value is the most reliable for the evaluation of cash flows of the highly volatile, long time series. In the hybrid maize branch summarizing the annual cash flows and comparing them to the net present value of cash flows formed by calculation of averages, the difference is significant, namely 195,433 thousand HUF and 278,046 thousand HUF. The difference per hectare is 82,613 HUF, which is significant, so it may influence our decisions. Taking into consideration these findings, it is worth to calculate with the annual values even if it is difficult.

3./ Concerning the ranking on the base of the profit per unit of capital investment form among the studied three plant cultivation branches only the hybrid maize branch showed higher result than one. (Source: own calculations; Table 37: Comprehensive table of economics of irrigation investments in the branches of hybrid maize, fodder maize and winter wheat.)

The investments of grain storage offer an average rate of return of 17-23% (Table 51) at the present funding of grain storage and conditions of money market. This high figure is thought-provoking, and the question is what marketing channels resulted in the price differences of the grains until the

present, and why these sales did not increase the profit of the grain producers. Comparing the two storage construction methods to the direct sales after the harvest and the intervention sales as well as the stock exchange sale after warehouse storage it can be stated that among the present market conditions the highest income is expectable from the institutional system of intervention. If the storage facilities are constructed, the fairly high price ensured by the EU as well as the low storage costs result in a fair income which remains in the grain production branch.

4./ In case of the other two branches, namely in the fodder maize and winter wheat branch, the calculation of the net present value showed negative results, recommending that the intentions of investment should be reconsidered in spite of the fact that theoretically the under-zero result of NPV may denote that the economy limit is not reached, and does not mean that the investment project should be dismissed. If the discounted value of operational cash flows is negative, like in the present situation, the supplemental capital investment should contribute to the increase of net cash flow and to **the supplementation of the starting cash-flow.**

5./ The analyses carried out with the corrected water productivity factor are taken a reliable method which can be applied exclusively for the plant cultivation branches and the analyses of irrigation. This method of evaluation of investment economics has been elaborated exclusively for this task. This index shows how the given plant cultivation culture reacts to irrigation costs of 1 HUF, i.e. how many Hungarian forints of yield exchange are reached. The branches of irrigated farming can be ranked on the basis of the corrected water productivity factor, too. The CWF is 1.85 HUF for the hybrid maize branch, 0.97 HUF for the fodder maize branch and 0.64 HUF for the winter wheat branch (Table 37). (Source: Table 44)

6./ It can be stated that the economics of investments is influenced firstly by the profitability of the branch and in it the marketing price determining the incomes of the operational cash flow (Annex 12), secondly by the expenditures side of operational cash flow (Annex 13) and thirdly by the funding which influences the starting cash flow of the investment (in this case 0 HUF from 118.365 HUF/ha), while it is the least influenced by the interest subsidy improving the conditions of loan recovery. According to the above mentioned

the sequence of priority is the following: 1./ seed production branch (IRR= 87-106%, Source: Table 37), 2./ grain storage (IRR= 17-31%, Source: Table 51), 3./ in the winter wheat branch the high costs of water intake and water use as well as the low marketing price and in all branches the high starting cash flow and its occasional subsidization influence the result, while in the fodder maize and winter wheat branches the IRR values are not in the real range, thus neither the excluding of calculative rate of interest modifies the results. Therefore the subsidy of the interest influences the calculated value only on a very low level. Of course each value is valid only in the analysed period and in the examined branches without generalization.

7./ In general it can be stated that it is worth to start irrigated farming only in case **if the water as a resource is the only minimum.** This means that in case if all the other factors of the production e.g. the demands of genetics, soil cultivation, nutrient supply and plant protection have been fulfilled, and the plant needs only the artificial supply of water in a given phenophase – we can rely on the return of irrigation investments. The rather high water application costs can also be decreased by the rational use of the continuously decreasing water resources and the development of water management.

5. POSSIBILITIES OF PRACTICAL USE OF RESULTS

The analyses were carried out by the use of 16 static and dynamic methods. Summarizing the carried out analyses it can be stated that the calculation of net present value is the most reliable method for the evaluation of high volatility, long time series of cash flows. In the hybrid maize branch summing the annual cash flows and comparing them to the net present value of the cash flows calculated by averaging, the difference is significant, thus it influences our decisions. In case of calculation with the annual cash flows the fluctuation is higher than the average value. Taking into account these findings, it is worth to calculate with the annual values even if it is difficult.

In case of the other two branches, namely in the fodder maize and winter wheat branch, the calculation of the net present value showed negative results, recommending that the intentions of investment should be reconsidered in spite of the fact that theoretically the under-zero result of NPV may denote that the economy limit is not reached, and does not mean that the investment project should be dismissed. It was also clarified that the fodder maize and the winter wheat branches can not bear the burden of any kind of irrigation investment, which is obviously proved by the negative present values and the internal rates of return. In both branches the IRR got negative values. Thus it was also proved that the decrease of calculative rate of interest influences the economy of investments on a lower level. The negative values of present value calculations using average operational cash flow values draws attention to the fact that the fodder maize and the winter wheat branches can not bear the burden of any kind of irrigation investment, neither in the case if the external interest is calculated with the lowest possible value i.e. the exchange of operational cash flow of investments realized without interest or with a very high interest subsidy do not cover the return. Both branches are extremely sensitive to the starting cash flow of the investment, so it is necessary to analyse which is the maximum investment we can start. It has also been cleared that from among the supports of the agricultural investments the interest subsidy is not efficient, but the subsidies of inputs are more favourable.

In the winter wheat branch the present value of operational cash flow ca not bear a serious technical investment. At present in arable crop production there are

more serious economical problems, which can not be solved by starting the irrigated farming either.

The economical effects of grain store are demonstrated by the calculations of economics of storage investments by the help of several scenarios.

When different constructions are compared, and big differences of the starting cash flows and several market rates of interest are applied, these factors make the comparison more difficult. Moreover we can get better results by the use of method of internal rate of return than by the method of net present value. Based on the analyses **carried out according to the main rule**, the IRR value is 31% in case of intervention, 29% in case of **warehouse storage**, while the IRR index calculated by development of regional storage capacity is 23%. The internal rates of interest were always higher than the external ones. At the present conditions of prices and subsidies as well as the present conditions of money market the enterprises can reach the highest income from the intervention marketing, which is followed by the warehouse storage, then the construction of regional stores and at last the construction of own storage capacity. However all of them ensure higher income than the marketing directly after the harvest. The economical effect of grain storage is demonstrated by the calculations of economics of storage capacities with the help of corrected indexes.

The analyses were carried out in two approaches because we wanted to know if the financing method of investments reacts upon the economics of investments or not. In the case when the building of storehouses is carried out by using loans or there are mixed financing sources, the calculations should be carried out by the actual market rate of interest instead of the calculative rate of interest. Each method influences the operational cash flow on a different scale, thus it influences the economics of investments serving the enlargement of storing capacity. The net cash flow values calculated with one of the methods can not include n either the interest expenses, which are the elements of the debt service, nor the amortization **if the main rule is applied**. The second method incorporates these factors, as well.

From the standpoint of investors the high valued starting cash flow invested into the hybrid maize branch will return surely and quickly. From among the branches involved in the analyses the irrigation of the other arable crops is not profitable, but the investments in the storage facilities are obviously profitable.

Finally it can be concluded that in the Hungarian agriculture the twenty years time-lag in the technical background of production results in a fatal drawback on the global market, where our competitors dominate the agrarian market with scientific results of the same time period and the necessary financial sources. However we have excellent natural conditions for the food production, high level professional knowledge and worldwide known traditions, if the investments needed by the market can not be realized.

On a longer time period the lack of investments leads to the drawback of the professional work as well. This way the fallback is stabilized and the country is exposed to further negative processes. The solution can be the prompt rational application of financial sources, for the utilization of which the needed scientific and professional background is available.

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