

EFFICIENCY EVALUATION OF BUSINESS PLANS IN PLANT PRODUCTION

OCENA EFEKTIVNOSTI BIZNIS PLANOVA U BILJNOJ PROIZVODNJI

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Abstract: Decision making about investment acceptance is always based on the intention of the investor to gain certain income during the investment period. The integral analysis of economic effectiveness of investment is based on the analysis of economic success, liquidity, and risk, as a three basic components of investment process. Unfavourable financing conditions require from the owner of the household to make plans for lucrative businesses. This kind of planning considers formulation of expectations in the future, especially the relations between inputs and outputs, products prices and production costs. In crop production planning the rule of the highest revenue on limited resources should be applied. Before formulating alternative plans in crop production, special attention should be paid to intensity of soil usage. The selection of production lines depends on the most productive and the most lucrative crop system.

Apstrakt: Donošenje odluke o preduzimanju investicije je uvijek zasnovano na nameri investitora da u toku investicionog procesa ostvari određenu dobit. Celovita analiza ekonomske efektivnosti investicionog ulaganja se zasniva na analizi ekonomskog uspeha, likvidnosti i rizika. Nepovoljni uslovi finansiranja zahtevaju od vlasnika gazdinstava donošenje visoko rentabilnih planova, što podrazumeva formulisanje budućih očekivanja odnosa inputa i outputa, cena proizvoda i troškova proizvodnje. Pre formulisanja alternativnih ratarskih planova posebnu pažnju treba posvetiti intenzitetu sa kojim se zemljište koristi.

Key words: plant production, business plan, efficiency

Ključne riječi: biljna proizvodnja, biznis plan, efikasnost, investicije

INTRODUCTION

Modern business of agricultural households is characterized by increasing risk and uncertainty. Especially agriculture is characterized with high risk. Causes can be of biological nature of the production activity that is highly dependent on exterior factors to the effect of the resources market. Business risks are in relation to financial risks.

Decision making about investment determines for which purpose available financial funds of the enterprise should be used, i.e. means which could be acquired from other source. Therefore, decision making about investment is mainly carried out within investment plan or investment project.

When evaluating profitability of investment possibilities it is very important to understand that factor of time affects the value of money, although it changes also due to different application methods.

In new project tasks in vegetable production, the most important thing is to rely on reliable firms and experts who can provide universal offer of equipment, raw materials and services. Beside technical aspect, choice is also depending on the fact of to which extent the investor is proficient in modern technology, if he is organizing the production or sale by him self or is he involved in the project from purely managerial positions.

MATERIAL AND METHODS

Data used in the paper was obtained from family household which over longer period of time has successfully organized vegetable production. Based on results and presumed technology of production calculations were made, followed by balance sheets according to official methodology.

Development of alternatives and their shaping was carried out at the level of Possibility study, Pre-investment programmes and Feasibility study or Investment programmes. Degree of imprecision of was determined by type of study, i.e. phase in which investment project was at the moment.

According to experience/experiential standards (UNIDO manual), in a pre-investment study degree of deviation of +- 30% is allowed, and in investment study +- 10%. These amounts are mainly covered by reserve item (up to 10%). Evaluation of project which is based on cost elements obtained in this way can not be considered sufficiently reliable basis for decision making regarding investment. Situation can be overcome by sensitivity analysis where cost variations +-30% is simulated. For development of investment study methodology of the World Bank was used which is also official methodology in Serbia.

Balance sheets were developed for previous three years and relate to household as entity. This is due to the seasonal character of vegetable production when it is not possible to separate in any precise way costs according to certain enterprises nor income/cash flow from sale of final products. Namely, there is no continuity in production and realization of product, for instance 30% of the tomato quantities are available in June, 50% in August and 20% in September. In mentioned months, because of different supply and demand prices are different and certain costs are overflowing/pouring onto other enterprises due to technological demands/requirements. No significant changes in realized profit were established, although the last year, 2005, was very unfavourable for vegetable production.

In total expenses, other variable costs are slightly higher than direct business expenses primarily because of hiring of season labour. In other fixed costs the following were included: lease of stand on the green market, market fee and vehicle registration. Estimated wages of family members which are capable to work are calculated into household expenses.

RESULTS AND DISCUSSION

Investment decisions are decisions on volume and structure of the firm's ownership. Investment project is unavoidable form of preparation of each investment, and at the same time the most important instrument for realization of the investment. They are used to define and determine precisely all issues of importance for realization of purpose and objectives of investment: increase of business activity, income, employment, etc. Investment project is used to define total amounts of necessary financial means, sources which will provide these means, way and structure of their spending, investment dynamics, etc. Investment projects are prepared and realized through three phases: pre-investment or preparatory phase, investment or implementation phase and operational phase.

Considering current situation on the market, expected growth trend, estimated potentials of organized marketing of vegetables and other macro economical flows, we decided

upon more moderate investment level in household which can provide profitability of the project, but includes slightly higher involvement of human labour and increased risk in production.

Household is specialized in vegetable production and it doesn't realize any income from other activities or by sale of other agricultural products. There were no significant changes in production assortment, and changes in structure are due to market tendencies, i.e. demand and prices. In previous period, whole activity on the household was organized by family members. This was possible because of the production volume and product distribution method. Certain parameters of business success are presented in table 1.

Table 1

Rate of business profit and economical efficiency

Rate of business profit (business profit/income)		
2003.	2004.	2005.
94.00%	75%	74%
Economical efficiency		
1.94	1.75	1.74

In 3 facilities/buildings of dimensions 70 x 12m, three field growing system was planned. Whole amount of necessary means shall be provided from credit. Plan of credit pay off/Annuity plan anticipated servicing of credit twice a year in equal semi-annual annuities (table 2). In the first year there is no payment, since first year represents grace period, so the interest rate is transferred to remaining 4 years. Total debt amount is 55,475.84 € of which amount 5,475.84 € is interest.

Table 2

Plan of credit pay off/Annuity plan

No	Plan of credit pay off/Annuity plan	Principal	Interest
1.	0.00	0.00	0.00
	0.00	0.00	0.00
2.	6934.48	6250.00	684.48
	6934.48	6250.00	684.48
3.	6934.48	6250.00	684.48
	6934.48	6250.00	684.48
4.	6934.48	6250.00	684.48
	6934.48	6250.00	684.48
5.	6934.48	6250.00	684.48
	6934.48	6250.00	684.48
Total	55475.84	50000	5475.84

In previous period, structure of sale shifted from green market to other retail stores. Now, 50% is marketed in advance to already known buyers. Owner intends in future to sell entire quantity of the product to known buyer. With the improvement of quality, assortment and by obtaining products in periods of reduced supply, it is to be expected, beside higher price, to enter into some of the commercial systems. In this case, investment in packaging equipment, cooling system or any other equipment is unavoidable. The greatest competition is importers of fresh vegetables which dictate the prices of final products and have business connections with wholesale stores. Also, potential competition is domestic producers directed towards Belgrade market towards which the household owner is also gravitating.

Planned balance sheets in next 5 years + current year are presented for the household as entity. Starting with 2008, due to the lack of possibility to precisely evaluate trends of input and output prices, exchange rate and other relevant parameters, in our conditions, all balance sheet items remained unchanged inclusive to year 2011 (table 3).

Table 3

Planned balance sheets

Balance position	2006	2007	2008
A. IOME AND EXPENSES FROM REGU. POS.			
I BUSINESS INCOME	37757,08	62945,09	69145,58
II DIRECT BUSINESS EXPENSES	6.504,05	11160,57	12634,51
III OTHER VARIABLE BUSINESS EXPENSES	9410,88	14371,70	15374,53
IV CONTRIBUTION RES.	21842,15	37412,82	41136,54
V FIXED COSTS	2535,09	3738,89	3.913,58
VI BUSINESS RESULT/OUTPUT	19307,06	33673,93	37222,96
VII FINANCIAL INCOME	0,00	0,00	0,00
VIII FINANCIAL EXPENSES	0,00	0,00	13868,95
IX OTHER INCOME	0,00	0,00	0,00
X OTHER EXPENSES	3727,60	3.909,01	3869,92
XI RES. FROM REG. BUS.	15579,46	29764,92	19484,09
B. EXTRAORDINARY ITEMS	0,00	0,00	0,00
C. RES. BEFORE TAXES	15579,46	29764,92	19484,09

Projected money flow indicates the ability of household to service granted credit in all years. Total net cash flow is at unsatisfactory level only in 2008. Reason for previous statement is in additional investment of family household used for broadening of production from own resources. However, total net money flow from 2006 indicates liquidity/current money flow regardless of the negativity of the same item in 2008. Mentioned statements are confirmed by time needed for depreciation of planned investments.

Deadline of return calculated based on ratio of net money flow from business activities and total investment value is 2.19.

Static evaluation is based on individual parameters which are calculated from money flows. Profitability of investment demonstrates that on every invested 100 € 38.97 € are

gained. Economical efficiency varied from 1.70 in 2006 (without new investments), 1.90 in the first year of exploitation of new plastic green houses (2007) to 1.39 in debt servicing years. In any case, during entire period, coefficient of economical efficiency is above/over 1.

Risk factors and low point of profitability are presented in table 4. Based on obtained parameters the following evaluation can be made:

- Business risk factor varies from 1.105139 to 1.111032 which is favourable since also the lower risk of reduction of business result/output is below the limit of providing of positive gross financial result. It is influenced by: selling price, production volume, physical consumption of direct material, energy, services and labour, investment in assets and fixed costs.
- Factor of financial risk is influenced by business result/output and amount of net expenses of financing and it should be as low as possible. In this specific case it is our opinion that value/amount of financial risk is acceptable.
- Share of gross margin in regular income caused low value of necessary income for realization of neutral business result/output. This means that we need income of 6290.48 € in year 2007, i.e. 6578.26 € in remaining years to realize neutral business result/output, or 9.99 %, i.e. 9.51 % in remaining years. In regard to amount/value of business income necessary for realization of neutral gross financial result/output in 2007 it is 6290.48 € whereas in remaining years it is considerably higher (29890.3 €).

Table 4

Risk of realization of financial result/output and lower rentability limit

No	Position	2007	2008
1	Business risk factor	1.111032184	1.105139
2	Financial risk factor	1	1.593857
3	Total risk factor	1.111032184	1.761434
4	% share of margin in regular income	59.43723331	59.49265
5	Income necessary for realization of neutral business results/outputs	6290.484587	6578.258
6	Income necessary for realization of neutral GFR	6290.484587	29890.3
7	% income used for realization of NBR	9.99360647	9.513634
8	% income used for realization of NGFR	9.99360647	43.22806

CONCLUSION

Suggested technical-technological solutions require relatively small/low investment and from the aspect of economical efficiency it is acceptable. Organization of production is adjusted to technical, personnel and financial potentials of the credit applicant. All financial indicators show that this is highly profitable production. Planned results/outputs included in financial analysis guarantee creditor that credit applicant will be capable to return borrowed means in contracted/agreed period and amount.

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