

THESES OF THE PHD DISSERTATION

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**PRACTICE OF ORGANIZATION OF QUALITY BEEF
PRODUCTION IN THE EUROPEAN UNION AND ITS
POSSIBILITIES IN HUNGARY**

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1. OBJECTIVES AND PRELIMINARIES OF THE RESEARCH

Hungarian economy faced significant changes in the past decade, which changes especially affected agriculture unfavourably. The elements of the social and economic environment changed basically, and as a consequence mainly in the first years of the '90-s a considerable decrease could be observed in the whole agricultural economy, and especially in the animal breeding sectors. This process occurred in spite of the fact, that the potential for agricultural production in Hungary is very favourable, and our production results and products are well known and appreciated in Europe and also outside Europe.

From 1989, the beginning of the system transformation the number of cattle, and parallel the number of beef cattle producing quality products also decreased considerably. This decrease was especially characteristic in the formerly determining large-scale herds, and mainly due to the worsening of the income position of the beef sector. Companies could ensure their further operation often only with selling the animals.

The ecological characteristics in Hungary are favourable for agricultural production. Formerly for centuries plant production and animal breeding were complementary activities that based on each other. The size and quality of land available, the rate of fodder producing areas (grass) and the available agricultural and industrial by-products would facilitate the breeding of more animals that is bred today. It is not only a waste, but also an economic mistake not to utilize the available favourable conditions.

Nowadays the main strategic elements of economy development are quality, competitiveness, sustainability, and insurance of employment needed by these elements. The consideration of these objectives is inevitable when determining the development requirements of the sector. This applies also to the beef sector, where the natural and partly the economic resources are available for achieving a more profitable and larger volume production. The relatively low domestic beef consumption cannot mean a limit to this development, as the demand from foreign markets for high quality (and also offered on a competitive price) products is expected to increase. Parallel to the positive change of the living standard the increase of domestic beef consumption is a realistic expectation.

During the elaboration of the development strategy of a sector one should always start with an analysis of the concrete situation, which means the international and domestic economic environment should be evaluated and the objectives should be determined. Among these objectives quality should play an outstanding role, therefore in the dissertation more emphasis was put on the quality aspects of the domestic beef production. During the analysis of the domestic and regional perspectives of beef production considering the challenges of the new century, and with the research concentrating on quality and competitiveness the deductive approach seemed to be most goal-oriented.

To define the strategy of beef cattle breeding in the West-Transdanubian region where the research was performed, the understanding of domestic and foreign regulators and legal background of quality production was inevitable. On basis of these information the position of the sector can be

defined both in the national and world economic circumstances that play a determinative role in certain sections of the beef food chain.

A general compass is available on basis of the EU market regulation, as a consequence of our expected EU membership mainly this regulation will define the frames of domestic beef production and possible development actions.

The main approach of the EU regulation is the market regulation of the product group, which approach plays a significant role in the income regulation of farmers, through the regulation of (1) prices, (2) direct payments, (3) intervention procurements and (4) self-storage support. The market regulation also defines the rules for trade with third countries that is of great importance in our case, as the domestic beef production is mainly export oriented. The present elements and the future changes drafted in AGENDA 2000 only serve as a basis for the handling of the product group. The product chain approach widens the range of applicable tools and opens new perspectives both in beef production and sales. It is well known that agriculture has a strategic importance in many countries of the European Union. But the different countries apply the liberalistic market economy circumstances in different ways. In West-Europe and also in the EU agriculture always meant more, than just production of different products. The topic of agriculture and rural development was considered and applied in a complex way. The category of “quality” is enlightened in a different way and its context enriches with special elements due to the specifications of the “European agricultural model” and the applied regulatory practice in case of different products.

Based on the above written factors the objectives of the research were to analyse the beef production practice applied in the European Union and define elements that can possibly be adopted in Hungary. In the first phase of the research the main goal was the clarification of the following questions:

- which are those factors that play an important role in the definition of quality beef;
- which are the coordinating factors in the organisation of beef product chain;
- how the status of the participants of the organized product chain changes, with special interest on quality systems;
- what are (will be) the possibilities of the region to keep their individualism in the common market (production, sales etc.) of the European Union;
- what are the legal frames and quality categories that should be applied in all countries (regions, by every farmer) in the EU;
- how the definition of quality beef centric consumer (may) change in the future and what are/will be the expected effects on the domestic beef sector.

In the second phase of the research the present situation of beef sector was analysed, regarding the already existing and applied animal identification, registration, labelling, quality systems, and the possibilities of using brands and organic production were also evaluated. The detailed analysis of the operational circumstances of the product chain was facilitated by the evaluation of a questionnaire research of the processing

industry. The detailed results include aspects of raw material procurement contacts, production capacity, product structure and sales channels in order to facilitate the concrete basis for quality oriented development possibilities of the product chain. Among the questions that should be clarified the following ones seem to be the most important:

- what regulatory measures exist in the domestic beef product chain and how compatible these regulations are with the EU regulations;
- how the domestic beef production and consumption changed and what does the potential situation of production look like at present;
- how the domestic and the regional beef product chain operate at present;
- what are the connections among the different levels like on the level of processing, in case of different economic sizes;
- how suitable are the present circumstances (possibilities) for quality production (technological, technical, IT circumstances);
- how well established quality insurance systems are in domestic terms and how effective they are in the sector;
- on what level the uniform (coordinated) system of beef product chain is established in Hungary;
- who and in what way organize or in the future can organize the product chain.
- The elaboration of a sector product chain model that is in compliance with the EU regulations.

The results after the research performed during the first two phases of the research make the “definition of future prospects” of the beef sector possible, and on this basis the development directions (objectives) can be set. Such objectives and tools should be defined that continuously or step-by-step establish the possibility of sustainable development of the sector; the three basic pillars of this development is quality, competitiveness and profitability.

Based on the present situation of the beef sector the third phase of the research focuses on the regional aspects. With the organization of the evaluated factors a SWOT analysis (Strengths, Weaknesses, Opportunities and Threats) has been carried out, where the most important elements were listed:

- Possible future prospect of the beef sector in the West-Transdanubian region (production direction and volume, scale of production and farm size etc.).
- Effect of quality, competitiveness and profitability on the development possibilities and sustainable development of beef sector in the West-Transdanubian region.

2. MATERIALS AND METHOD

The research work on what the dissertation was based on was carried out at the Department of Agricultural Economics and Marketing at the University of West-Hungary, Faculty of Agricultural and Food Sciences.

The basis of the research was ensured by domestic and foreign study tours (primarily in EU member states, like United Kingdom – Brooksby Collage, France – La Roche Sur-Yon, Italy- Azienda Sperimentale Vittorio Tadini, Germany- Universitat Hohenheim, Austria- BOKU), when the collection of different documents, system descriptions, data and information was facilitated.

The evaluation of the regulation system was based on the system-model that identifies the Common Agricultural Policy (CAP) as a cybernetic system. The product specific regulation system of the CAP is easy to analyse in this approach regarding the beef product chain. During the analysis of the Common Market Organization (CMO) of the beef product group emphasis was put on the documentation system and the connecting tools – not only focusing on market regulation – like insurance of origin, different aspects of branding.

The used data primarily originate from the data base of the European Commission, the statistic data base of FAO, the Ministry of Agriculture and Rural Development (MARD), Győr-Moson-Sopron County office of MARD, Győr-Moson-Sopron Statistic Office; besides the above mention primer data several already published materials and information have been processed and grouped due to new aspects as basis of the secondary

research.

Besides the processing of the Bibliography an important part of the dissertation describes the domestic and EU – that have already applied by or not yet introduced to the domestic legal system – regulations.

In order to achieve the objectives of the research the data collection partly directly focused on the participants of the product chain; therefore data mainly originate from beef producing farms, meat processing and sales companies from the West-Transdanubian region. The determinative part of the own research stands of a questionnaire that focused on the present state and future possibilities of the meat processing industry, considering the main objectives of the research. 10 questionnaires were returned from regional processing plants and have been processed with Microsoft Excel spread sheets on regional level (West-Transdanubian region -, and others) and according to size categories (large-middle- and small scale processing facilities). The grouping factors of these latter categories were the rate of own share, sales revenue, and number of employees.

Parallel to data collection personal interviews were conducted in research institutes (Research and Information Institute for Agricultural Economics, Agricultural Marketing Centre) and other research places. Furthermore the representatives and officers of companies, enterprises (e.g. representatives of companies dealing with the establishment and justification of quality systems, integrated company management systems, officers of Animal Health Stations, etc.) and professional organizations (e.g. Slaughter Animal and Meat Product Council) were continuously interviewed.

Besides the above described data collection and research activity the personal involvement and participation in the elaboration of the Győr-Moson-Sopron County and the West-Transdanubian regional agricultural and rural development plans highly contributed to the research.

The structure of the dissertation follows the introduction and analysis of the regulation system that is applied in the EU in a synthesising and exploring way, afterwards the comparison of this system with the existing Hungarian circumstances and the definition of adaptation possibilities of certain parts are described.

3. RESULTS

When the development of a sector should be started from the very beginning, the sector should be observed in a complex system and the existing good practices, examples should be followed. In our case this means the integrated approach and application of product-chain approach. The EU example for Hungary can be offered due to the following reasons:

- on one hand Hungary will join the EU on a short term, therefore the application of the EU regulations will be obligatory;
- on the other hand the AGENDA 2000 document does not negotiate the decrease of support for the sector, but recommends the restructuring of the supporting system that guarantees the participants of the sector a long term basis.

At the same time it should be understood that the EU regulation system is highly bureaucratic - often over-regulated -, and its elements hide different risk factors for the participants of the domestic product chain. The introduction and effective application of these regulatory measures requires well prepared experts in all levels of the product chain and also a suitably operating institutional system in the background. On one hand with the application of certain measures our competitiveness may decrease due to the increasing costs and as a consequence the increasing prices, but on the other hand the lack of these measures may risk our market presence.

The happenings of the past months are very promising, as an evident consensus was reached among the domestic scientific, professional circles and policy decision makers regarding the necessity of the development of the beef sector. Opinions vary more regarding the

method and possibility of achieving this development. But time is running out as the possibility of national agricultural policy to make decisions and actions is very limited. Investments that could serve as a basis for the development – especially those investments that aims at increasing the production capacity of certain facilities – should be performed before the accession date. The development process is more difficult as cattle breeding requires considerable **amount of binded assets (jelentős mértékű eszközlekötés)** and it is highly source demanding, therefore during the slaughtering cattle and beef production only cost-effective solutions can be applied. On the other hand due to the large generation interval that comes from the biological characteristics of beef cattle time is relatively limited for the producers to make actions.

In the first part of the dissertation some basic approaches are introduced regarding the definition of quality, which served as a basis for further research on quality elements and for the determination of trends. According to the contents of this part it is evident that in the past years more emphasis was put on consumer protection, product insurance and quality insurance. Regarding the connection among these factors, the sector-specific approach and the domestic possibilities and issues no former study has been published, that droved forward the implementation of the research.

Considering our future EU accession and the dimension limits of the dissertation the introduction of the quality aspects of production only focuses on the EU matters and the Hungarian case. The evaluation of the connection among certain elements of the product chain and the analysis of the above drafted cybernetic system showed that quality production is achieved on one hand by the regulatory measurements (e.g. mother cow premium, quality requirements of beef for intervention procurement etc.),

on the other hand indirectly by the information and documentation system that is described in details.

Hungary's accession to the European Union means that the EU regulation system, its tool and institutional background will be obligatory. At the same time from investigations regarding the economic environment of beef production it shows that the system hides considerable reserves to make use of local circumstances and specialities. Product insurance and product quality are connected to each other in case of the beef sector, and appears in an integrated system together with the questions of rural development, environmental protection and employment issues. The new approach regarding quality policy of the EU puts emphasis on local specialities, on traditional local products with exceptional characteristics.

On basis of the research it is also evident that we often face parallel and sometimes also opposite processes. From one side we observe the harmonisation of legal background, liberalisation of world trade and globalisation, from the other side the establishment of local frames, the focus on national and regional values increases. Regarding the EU it means that the Community should not be considered as one "melting pot", because the member states continuously emphasize their national specialities and characteristics in order to regain consumers' trust in the case of beef production, although their national independence is limited. With this national focus some even expect the increase of market share of the beef product group. Several EU regulations also contribute to this process, and these regulations are often achieved or performed on a national or regional level. In this case beef is a special product, as the general decrease of meat consumption and also several market factors limited and still limits its market possibilities.

More attention should be paid to the measurements applied after the market crisis caused by the BSE case, to the concrete actions and possibilities. Thanks to food scandals consumer trust again became a central point for different products, also in case of beef products. The basic ideas of food regulation – e.g. the ‘Euro-recipe’ – were evaluated and modified. Certain sources were separated in the Community budget to support quality production, to cover a part of the extra costs arising from quality-conscious production. Such sources are available for the establishment of animal identification and registration system and the connecting beef labelling system, and also the possibilities deriving from the new quality approach could be mentioned here (e.g. traditional products, exceptional quality and origin-protected products, support for organic farming).

As the BSE crisis affected mainly the British islands, the beef traceability system of the EU is introduced through the example of the United Kingdom, where the strict regulation system is carefully applied. The obligatory beef labelling, or with other words the origin insurance system is separately and in details described. The elements of this system are applied in the frame of an obligatory scheme and at the point of sales, therefore the sales organizations should elaborate their own system according to the existing scheme. They and also their suppliers should decide on certain measures in order to provide enough information regarding the sold beef products. This information requires permission from the Ministry and consist of such data that cannot or can only partly be controlled at the point of sales. Permission is not needed for brands that are lately widely used in the EU, namely for products with protected origin and protected geographical identification (PDO, PGI). The scheme is easily applicable for those who produce their products

according to an existing national quality insurance program, when all sections of production are registered and insured from the beginning of the production until the consumer, so “from stable to table”. This way the parallel actions could be filtered and no double tests are performed, that facilitate cost-effective quality insurance.

The national quality systems responsible for the coordination of the product chain and the practical application of traceability were introduced on the examples of several EU member states, besides the United Kingdom the practices of Ireland and The Netherlands were described. Due to the analysis the regulation and the institutional system of Scotland are worth following; the system inside ensures the relative freedom of the participants on the same level, and outside guarantees the relatively closed product chain.

As production traditions are more valued and regional characteristics and specialities are more emphasized the applicability of the described brands (protected origin and geographical identification) was investigated; the production traditions of the Hungarian and the West-Transdanubian region were analysed and on basis of the past and present situation the development possibilities were outlined. According to the investigations the role of the beef sector in the national economy was much higher than it is today, and also the research highlighted that the present problems are often not newly recognized.

It can be stated that in spite of the difficult situation of the product group its future position is promising in case the presence of several circumstances. The increase of consumption is expected in the Eastern- and South-East-Asian region of the World, but if we concentrate more on the traditional – mostly European – markets, new market segments could open for our products. In order to gain more market share the product

differentiation and market positioning is highly recommended. The present and future markets should be analysed, and the future possibilities for market places and products (living animals or highly processed products) should be defined. Considering that the introduced quality products should be sold on the market without any problems, any developments could only be recommended after a detailed analysis of the circumstances and the case. Regarding the application of tools and measurements described in the dissertation it should be emphasized, that the application of certain elements is optional, their use should be decided after the detailed evaluation of the target market. Some elements are recommended besides the obligatory animal identification and labelling system, namely some other information could be added on the label, quality insurance system, application of brands and protected identification signs, availability of ecological circumstances could be mentioned on a volunteer basis.

The investigation of EU trade with third countries was justified by the importance of market possibilities of our domestic products outside the EU. On certain foreign markets the application of the above possibilities is optional, some elements can be introduced and some neglected. In case the living animals or more the processed beef products are to be placed on the most demanding EU common market, the above-mentioned elements should be considered.

Our further main partners, the CEFTA member states included the southern Slavic countries such as Croatia and Slovenia will probably play a significant role. It can be assumed that they will also join the EU in the near future with their EU harmonized food regulation practice and sales structure. Products are sold mainly by the same multinational retail chain stores as in the EU. The secure of our market position can only be

guaranteed if the state of preparation is similar to the EU level and we guarantee the required quality parameters.

From the viewpoint of the domestic production we should not neglect the increase of domestic consumption, although the beef production has always been an export oriented sector of the economy. It should be mentioned that domestic – mainly price oriented – consumption did not increase even after the positive changes of the national economy, therefore the consumer trust should be strengthened and considered in the future. In case we reach again the consumption level of the end of the '80-s, that would already mean a considerable increase on the demand side. Consumers know more and expect more from the food industrial products therefore the question of quality categories will soon be addressed, and on the middle- and long term the expectation for the above mentioned quality characteristics would increase.

As it seems from the former investigations, in case of products for human consumption the measurements regarding food insurance getting stricter continuously. Processing plants are already required to insure animal identification, and they should apply some kind of quality or hazard analysing system. By the time of accession it is possible that the presence of these systems would be expected from the joining countries, that might have a tragic effect on our production potential even if the level of animal stocks improve. Naturally the question still remains: with what stock and farm size and how effectively can we achieve this quality insurance? The costs of these factors appear under different cost headings – therefore besides the herd improvement and variety issues the topic of size economy is also important.

Regarding the origin identification and registration the national regulation is satisfactory, and in the frame of the Cattle Information

System the animal identification system almost covers the whole country; therefore the national registration system can guarantee the identification of origin, the technical requirements of labelling, the traceability of animals from the farm until the processing plant. The investigation of the inner information system of processing plants enlightened several problems. This means that several plants did not establish an inside informatics and technological system to follow the route of certain meat parts, and the traceability of meat parts after cutting and deboning is only sectional. The development of the inner informatics system of the processing plants is highly recommended. The development can be achieved on a sector level, with the introduction of integrated management systems. This would guarantee the requirements of labelling, the satisfaction of different levels of the product chain, the marketing channels and as a consequence the consumer needs, and also the documentation of the quality insurance system applied on sector level could be performed.

A further possibility to answer the above-mentioned needs is the separate packing of certain meat parts.

In case of processing plants the increase of production costs, the finance of unused capacity rise further problems. It is considerable that in spite of the limited time interval available even the most necessary developments (e.g. satisfaction of labelling needs) are not included in the short-term (until the EU enlargement) development plans of the processing plants.

Only few processing plants made some regional or product specialization that might limit market possibilities on the long term.

Agricultural plants almost entirely lack quality or hazard analysing systems, but they are prepared for introducing such systems and the hygienic level is satisfactory; the introduction of consumer oriented

quality systems, the establishment of a TQM that integrates production and the connecting industries might cause problems especially in case of small processing plants, therefore in the future more state support is needed to fulfil these requirements.

Adapting the most important characteristics of the EU systems the elaborated scheme focuses on the total integration of the whole beef product chain and the application of product chain approach, and a national system will be needed to serve as a basis for coordination connections.

The harmonization of the EC 2081-2082/92 regulations in force regarding the application of protected origin and geographical identifications, traditional and exceptional product brands should be elaborated; that would contribute to the strengthening of market position of organic products and products originating from a quality insured process. It should also be emphasized that a reasonable financial advantage only appears with suitable supply and effective marketing programs can only be based on such supply

Further objective of the research was to list the differentiating factors that should be considered when the beef production potential and the regional development plans for the West-Transdanubian region are elaborated. Therefore the SWOT analysis of the region has been put together, the ‘Strengths and Weaknesses, Opportunities and Threats’ list assisted the systematic approach. During the elaboration of the regional program besides the common goals and characteristics it was interesting to see the significant differences among the counties forming the region. These differences might contribute to the better understanding and utilization of the agro-ecological potential, the territorial differentiation in connection with beef cattle breeding and beef production. Primarily the Zala county

and certain West-Transdanubian micro-regions are suitable for beef stockbreeding, mother cow and heifer growing; on the other hand the fattening stocks should be kept near the grain producing areas and processing plants. Regarding quality production the factors of sustainable and adaptable agriculture should be considered, during the elaboration of regional development plans. Harmony should be defined and found among the most important differentiating factors and local circumstances, such as:

- natural and economic characteristics of a region;
- size of intensive and only extensively utilizable grass lands, level of arable fodder production and grass land production;
- labour market situation, professional qualification;
- available infrastructure, buildings and equipments of cattle keeping, technical level of facilities, production (breeding) technology;
- available own sources for investments, credit bearing ability of the farm;
- procurement ability and geographical location of milk- and slaughtering animal consumption-processing centres;
- number of animals, genotype, production level, animal health situation;
- geographical – production concentration of agricultural and processing facilities;
- supply possibilities of industrial and agricultural by-products;
- other coordinating connections;

and also among the breeding, keeping, technological and economic characteristics of beef cattle breeding.

Market only pays quality products a high price, if high quality appears in an integrated way both in the complex occurrence and also in the sales of

the product. In case a product bears only low costs and the profitability is mainly determined by the efficiency of production, the extensive circumstances and cost-effective production, the possibility of high prices is of great importance. At the same time there is a contradiction between high prices and competitiveness reached through the decrease of prices.

From the viewpoint of the consumers the food they purchase should not only be reasonably priced but also safe, healthy and high quality. The elaborated food-chain model introduced in details could help to achieve the above described goals.

4. NEW OR NOVEL RESULTS OF THE RESEARCH

1. Synthesising approach to define the characteristics of consumer oriented quality beef products, to widen the definition of quality to this direction.
2. The introduction of an obligatory beef origin insurance system in the EU can mean a limit in market presence for Hungary after the expected EU membership.
3. The elaboration of product chain model that is based on the national characteristics and the EU obligatory systems, and also serves as a basis for coordination connections.
4. The integrated company management systems can serve as a basis for insuring an informatics background - answering the challenges of the modern era - of the sectoral product chain.
5. In favour of the sustainable development of the sector we should find the harmony among quality, price and competitiveness in a way that consumers are guaranteed to receive healthy and high quality products.
6. To the efficient marketing program of beef products in case of products originating from a quality insured process and especially in case of organic products, the general use of geographical indicators and the legal protection of special characteristics will be needed.

7. During the elaboration of the beef production program on regional level a differentiated approach is needed regarding the characteristics of the regions (micro regions) and especially regarding the ecological potential. Primer principles are the consideration of factors of adaptable and sustainable agriculture, and the maximal insurance of those elements that are required for flexible adaptation.

5. SUGGESSTIONS FOR THE THEORETICAL AND PRACTICAL UTILIZATION OF THE RESULTS

1. The theoretical utilization of the results is recommended in further training and adult education.
2. The adaptability of evaluation of concrete regulations and measures, the analysis of the legal frame may contribute to the decision-making process for the experts of the Ministry of Agriculture and Rural Development.
3. The quality systems applied on a national level draws the necessity of coordination among the animal health organizations (e.g. animal health stations, food insurance authorities) and the sector-specific professional organization (e.g. Product Council, breeding organizations) into attention.
4. In all levels of the product chain the product chain approach, the continuous further training and the documentation of activities are emphasized.
5. Even without a sectoral informatics background that covers the whole sector the establishment of an informatics infrastructure for each producing and processing plants is recommended.
6. Based on the slaughtered animal the most valuable meat parts should be packed separately in vacuum- or protecting gas package

in order to guarantee a higher revenue; that can also contribute to traceability and opening new marketing (sales) channels.

7. The traditions of Hungarian beef production should be propagated through collective marketing actions; similar programs should be introduced to increase domestic consumption as well. In this process branded products and different protected signs can play an important role.
8. Regional characteristics could be emphasized with the geographical identification, or market share can be increased with the use of traditionally exceptional characteristic product signs. A great advantage for the use of these signs is the international level legal protection. Product development and production based on these qualifications are highly recommended for the processing plants.
9. The elements of sustainability and product insurance get a positive national and international regulatory justification. A production system considering these factors, due to the expected increase of support, the reachable price premiums and other advantages - after the necessary investigations - is recommended.

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