Success and Failure of the Hungarian Agrarian Model, 1960-1990

Schlett András

In the Hungarian agriculture from the beginning of the sixties, a true technical, technological revolution began. The main motive of this was to conciliate the discrepancies of political adequacy and economic rationality. During this process, they tried to acclimatize production organising systems living in the West with fitting it to the prevailing socialist ideological approaches. The steady increasing of the consumption level became the main political priority in the Kadar regime after 1956. It became important to raise the production in an ever-increasing way in the interest of enhancing the domestic food supply, improving excess of export over import for products of food industry, and increasing the balance of foreign exchange, especially convertible currency. The value of those products had been raised which needed to guarantee "the intense satisfaction" of the population.

The successful adaptation of the new technologies was a pressing necessity, because the agricultural output was considerably decreased as a result of the setting up of cooperatives (disinterest of the members, shortfalls of machines and experienced managers). The asset requirement of the agriculture was increased markedly by the reorganization. Nearly nine tenth of the agricultural investments had to extend on the replacement for dropped productive forces of small works between 1958 and 1968. At the same time, it was a need to provide the higher operational costs of the newly created estates. Skilled workers had been trained in large numbers, engineering schools were organized and the previously closed down higher education institutes were regenerated. The total volume of investments for the agricultural sphere was increased, the producer's prices was raised (by 10 per cent in 1966 and again by 10 per cent in 1968).

The results of the new agrarian policy manifested in the improving of food supply, creating the financial and technical foundations for the industrial-like

agriculture and the radical transformation of the working and life conditions for agricultural workers.²

The Hungarian agriculture expanded its output fast in the sixties and seventies. Between 1961 and 1978, Hungary was surpassed in the increase of gross agricultural production value only by the Netherlands. Moreover, Hungary took the first place in agricultural production value per head. Agricultural development speeded up especially after 1967. The agricultural production value between 1960/62 and 1983/85 nearly doubled. In case of cereal production per head Hungary was on a par with the USA, and it was only passed by Canada and Denmark, while in case of meat production per head Hungary stood second in the world after the Netherlands. On the other hand, however, because of the growth of capital intensity net production of the agriculture at the same time increased only by 20 per cent in relative comparative prices of 1981. The potential of Hungarian agricultural production was also significant in international relations. The average production of wheat and corn matched the French, the Danish, the American or Canadian outcome, and meat production was among the best in the world.

"Green Revolution" in the Socialist Hungary

In the fifties significant changes happened in the agriculture of the western world. The conversion mentioned as "green revolution" multiplied productivity in many fields. Industrial type production systems altered agriculture depending on external material intake and resources. They created artificial systems in order to cut processes adrift from environmental effects. Green revolution technology is highly dependent upon a scientific and educational infrastructure. The new seeds required new knowledge to be created and diffused throughout the countryside and in urban areas. New research needed to continue, especially for issues in pest control, to ensure that genetic resistance to pests did not succumb to further evolution of virulence in the pest organism. Contrary to the industrial type, energy intensive agrarian system using great artificial material and energy having industrial origin, the logic of the industry (closed, places regulated by the people. processes based upon functional connections etc.) appeared in the agriculture as an ideal. As a consequence, the basic pursuit became the struggle to independency, the artificial regulations, and the gradual replacement of the natural resources with artificial resources.

General and basic features of the industrial like agriculture are the following:

² Pál Romány, "Reform az agrártermelésben, reform az agrárpolitikában" [Reform in the Agrarian Production and Reform in the Agrarian Policy]. In A magyar agrártársadalom a jobbágyság felszabadításától napjainkig, ed. Gunst Péter (Budapest: Napvilág Kiadó, 1998) 390.

³ In this, it also played a great role that in Hungary the density of population is smaller than in other agrarian countries.

⁴ Meanwhile the employed work force diminished significantly.

^{*} Schlett András is economic historian, sociologist, Associate Professor of the Pázmány Péter Catholic University. This study was supported by TÁMOP-4.2.1.B-11/2/KMR-2011-0002.

¹ Zsuzsanna Varga, "The Impact of 1956 on the Relationship between the Kádár Regime and the peasantry, 1956-66", In *Hungarian Studies Review*, Vol. XXXIV, Nos. 1-2 (2007): 155-158.

• It pays attention exclusively to the tasks of output in accordance with the principles of achieving independence and at the expense of other roles of the space (biological and the social living space); it chooses and uses solutions and technological processes by their productivity, effectiveness, and economic efficiency.

• It aspires to concentration and centralization, increases the (factory, field and machine) scales, tries creating ever and ever bigger "homogeneous" areas and by these methods makes "the central control and manipulation" more efficient and

"have a hold on" the processes.

• It has a basic method: transforming the environment on demands of decided tasks and activities or it shapes the space to the task and it is not seeking activities fitting into abilities of the space.

• It achieves increased artificial resource expenditure to a greater extent in relation to all of this.

Live-stock farming

Socialist ideology tried to change the producing proportions, push forward the segments having higher efficiency, and raise the output rapidly in agriculture. Before the poultry-farming program, Hungarian agrarian experts were informed by international data and foreign literature about the rapid industrialization of the poultry meat and egg production in the developed countries, in consequence of which this sector guaranteed the largest crowd, most equal quality and cheapest meat production within the briefest period. As a consequence of the great prolificacy of the poultries the rotation of the production is also quick, so it was appropriate for producing great mass of meat year by year. Its adaptation ability was remarkably wide and coped with every phase of the professional production. So in case of poultry meat and egg production the economic and political profile became compatible with each other.

The Hungarian agriculture was also connected to this sector by opening to the West. Egg production started in 1962 with Lohmann-type poultries imported from West Germany. Then, they organized the building of poultry stables within the farm, which were built in construction appropriate for the close production system. With the separation from the elements of natural environment and with the industrial type portioning it became possible to measure and to regulate all producing factors in all time. They created strict harmony among farming, propagation, incubation, raising, settling, and slaughtering. The activities of all factories were organized according to a closely connected program.

Because of the significant domestic supply and the relatively cheap price, domestic poultry meat and egg consumption skyrocketed and Hungary was ranked among the first five countries in the world screened per head in 1985. The production made a significant export possible. The most progressive role was

played by poultry-farming in the Hungarian large-scale live-stock farming until the end of the examined period, and in its level it became the closest to the leading countries in production.

In the field of large-scale pig breeding, they wanted to reach competitiveness with creating large-scale conditions similar to the poultry. In the beginning of the program, pig farms operating on the closed technological principle already existed in the developed capital countries, but their proportion was smaller than the capacity of the farms built in Hungary (with an issue of generally 600-700 sows, nine-twelve thousand porkers). The production with a new method – although this started on wide research-developing and producing base and by which they used numerous foreign experience and innovating results – remained problematic until the end. In the course of the planned investments, they often overdrew the financial budget with 40-60 percent. The buildings and the new farming technology did not fit to the nature of the animals. The production proved to be more material and energy demanding than the planned, which is why most farms could not realize the nominal output.

By introducing the system, the main fault was that during the carry out they copied the poultry-farming program mechanically. It turned out that they cannot take over everything from the poultry-farming, because the most difficult part of the process, the incubation was good to solve by poultries, but at the same time the early phase caused numerous further problems by pigs.

The failure of the program is shown by the fact that we could not manage to join forces with the international leading group, with the farming and the producing results, and meat quality also fell behind e.g. the Danish and Dutch standards. The losses caused by death and the so-called technological rejects were remarkably high (from 100 only 68–71 reached the slaughterhouse). National spread of the professional farming and stabilization of the results on internationally week middle level resulted in the most potential loss of Hungarian agriculture.

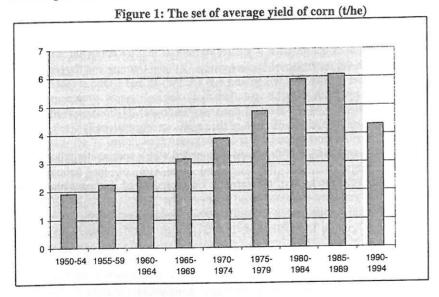
The industrialization of the sheep-farm ended with a spectacular failure, as it was less compatible with the biological capacities of the animals. By industrializing the production, the farming on closed tread grating caused foot problems and get lame within a short time, so the animals were later fattened within traditional circumstances but with intensive fodder supplement.

Cultivation of plants

The closed system of the professional commodity production was firstly developed in the production of poultry products, despite the fact that hybridization as the main incentive was taken over by the poultry farmers from corn growing. Corn came to the centre of the interest of experts examining the possibilities of intensive, professional production already in the sixties. Among the cereals, this plant has the greatest productivity, it contains the most energy in a unit quantity, and because of these two attributes it was the most appropriate for the realization of

the aims of corn and meat program announced by the upper leaders. In Hungary, different researches took place already from the beginning of the sixties. They examined the possibilities of increasing the yield, the question of one-crop cultivation all-round, made experiments as concerning variety-comparing and artificial fertilizer and looked into the effects of different weed-killers and machines of different foreign companies.

The operation of the corn production systems were allowed by the Agricultural and Commissariat Ministry in 1971. They used foreign exchange constructional credit form in the import of the necessary production lines. According to this, they had to create the conditions of the development of corn growing with the export of a part of the surplus crop. The CPS (Corn Production System) started its operation basically with capital machine system, although later they managed to substitute some machine type for some produced in Hungary. They used the technological system of CPS in 1972 on 60 000 hectares, in 1973 on 124 000 hectares. The centre of the system was the Bábolna State Farm in the first year. The result of corn production skyrocketed so it became necessary to create a separate company. On 30 March 1973 the Bábolna Corn Producing Mutual Company CPS was born.⁵



Source: Kálmán Szász, A gabona termelés alakulása, 1950–1994. Statisztikai Szemle. (1995) 11. sz: 893. In Hungary corn became the primary plant for the production systems of cultivation of plough-land plants. Its main attribute, which made it appropriate for this was the good monoculture-patience. The average yield increased by 25 per cent per hectares from 1970 until 1980 (see Figure 1). Besides creating fodder base the technical and organizational causes also played a role in that production systems got one-crop nature. Experiences, however, showed that within a relatively short time monoculture resulted in problems of different nature, whose neutralization required considerable material sacrifices. Such were the unfavorable physical-chemical and biological alteration of the soil. Many problems arouse e.g., the harsh spread of some resistant weeds connected to certain monoculture, and the accumulation of chemicals. The cut of the optimal time meant further disadvantage in the production during the yearly work.

Concentration

While in the developed capitalist states average farm size in the agriculture decreased due to the technical revolution, in Hungary a – many times abnormal – rise was characteristic. In the seventies huge company unifications took place in the agriculture. Between 1970 and 1979 the number of state farms reduced from 184 to 131 (see Figure 2), its average area, however, increased from 5 548 hectares to 7 598 hectares. Combinations were also organized. In case of combinations, main profile activities were not confined to the single sections of agricultural production. They clasped the former separated sections of the output, such as fabrication of the means of production, the production of the primary materials, processing and sale of the agricultural stock and validated these in the same enterprise domain. This company organization so evolved and set up had to undertake the complex development in its field of activity as well. This could be reached with development work using wider-range research and academic achievements, intense concentration of the production and partner relationships.

In Hungary, great agricultural companies had evolved never seen before, and their production value matched also the industrial corporations. Inside the economies, more vast sectors evolved and industrial and accessory activities also joined the agricultural production. Almost one third of the activities of every big farm did not banter close to agricultural production. Agricultural corporations and

⁵ See András Schlett, Sziget a szárazföldön. A Bábolnai Állami Gazdaság története 1960 és 1990 között [And Island on Shore. History of the Bábolna State Farm between 1960 and 1990](Budapest: Szent István Társulat, 2007).

⁶ Csizmadia, Ernő, "Folytonosság és változások agrárfejlődésünkben a nyolcvanas évek elején". [Continuity and Changes in our Agrarian Progress in the Early Eighties] In Agrártudományi Közlemények, 40. (1981): 108–119.

⁷ András Klenczner, "Új vonások az állami gazdaságok gazdálkodásában" [New Features of the Management for the State Farms]. In Gazdálkodás, 11(1982): 123.

the first combinations in it evolved in the beginning of the seventies in Bábolna, Agárd. Bóly and Mezőhegyes.

The combinations and state farms integrated more and more lands, gave rise to enormous production volumes, developing either agriculture or food industry and different industrial activities. They played an important role in the evolution of productive systems. They provided the widespread of up-to-date techniques and technology through the production systems coming into existence.

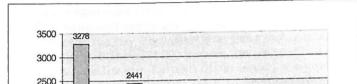


Figure 2: Changes in the number of co-operatives and state farms

2500 2000 1598 1500 1000 500 184 1970 1975 1985 1965

Source: László Csete, A termelőszövetkezetek és az állami gazdaságok feilődése (Budapest: AKI, 1985).

In agriculture, the integrating activity of the big farms became a characteristic developmental direction beside the centralization process. The rise of the company size was changed with horizontal and vertical relations. New type co-operation forms were created and the process of production concentration and specialization got new content. In agriculture, enterprise systems came into being with lot of functions and rich profile. In the scope of the company, supra-company type of organizations (systems, associations) were formed.

The existence of production innovation assumed changes in the factory organization, and this went together with the spread of different associative forms in agriculture. These had significant task in the development of the technicaltechnological innovation. The role of the system centre as innovation centre was based on the genetic, technical technological and farming complex system, where research development activity had more and more role.

The most characteristic feature of the co-operating process was that certain previous company functions were often separated from the frames of the company

and found employment on other organizational level of the integration. The production systems represented technological and organizational innovation and most of them operated as an organization spreading innovation.

Labor Organization: Taylorism in the Agriculture?

Until the seventies, Taylorist labor organization principle became dominant in the Hungarian large-scale farming. Social agrarian politics saw modernization of the Hungarian agriculture in the increase of production and domestic acclimatization of modern technologies necessary for this. So could this paradox emerge that modern production technologies built upon farm economies were tried to being adapted for an extremely different labor structure.

The results of the Taylorist thoughts being transplanted to the industrial practice and the reconstruction of labor structure is well-known: a rigid but productive hierarchy operating precisely came into existence. And so that Taylorism got into the Soviet practice as a methodology of socialist industry organization in the tens and from the fifties to the practice of the eastern European states, from the sixties we can also see a kind of "knowledge import" following the socialist reconstruction of the agriculture.

It was started a reorganization of the economic management system after changing the profile and as a result came into being the Taylorist labor organization. It consisted of highly trained corporation elite, executing junior managers, piece-rate fixers, supervisors, and semi-skilled workers.8 A graduated group of experts became involved in the agricultural holdings, whose knowledge was based on modern science and it was grounded by chemical and biological education. These agrarian experts considered the Taylorist labor organization the most effective model, since they had been taught by universities. In the labor organization, the management monopolized the decisions by its thorough grounding, thereby it forced the lower levels into the simple role of order executing, and many semi-skilled and unskilled workers were fitted to the system in accordance with the demands of mass production.

The agricultural holdings made considerable progress in respect of technology and biology and the modern technology conflicted more and more the emerging differences of the standards within the management.

This kind of tendency was strengthened, because the centralized management of the enterprises was edged away from the execution and the central decisions had to carry on by multi stages more than required to the implementation

⁸ Tibor Kuczi, "Taylorizmus a mezőgazdaságban?" [Is Taylorism in the Agriculture?]. In Emberek és intézmények. Két zsákutca az agráriumban, ed. Juhász Pál (Budapest: UMK-Jelenkutató Alapítvány, 2006) 14-15.

and therefore the possibility for distortion was increased more and more during the execution. ¹⁰

While the agricultural production becomes an industrial like one, it frequently occurs the slackening of the strict connection between the particular agricultural sectors and the territory. The most important task of the area managers is the operating control of the farming within their trusted territory. The synchronous combination of the territorial and the sectorial organizational principles can be observed in the agricultural business organization from the beginning of the seventies. 11

Fields of effectiveness loss: productivity lag, work discipline, stake

In Hungary even the Taylorist great enterprises did not proved to be efficient in producing mass products e. g., corn, in spite of the fact that average yield did not lag behind the international top-ranking countries. Corn sector is low live labor intensive so even large farms can operate with half dozen employees as the examples of American family farms show. Even so, Hungarian cooperatives and state farms employed numerous people and contrary to the flexible division of labor of the American farms (where an employee could be assigned more tasks) in Hungary there was a rigid labor organization full of hierarchy and having four or five leading levels. 12 This was acutely true for producing exigent products demanding big living labor, serious diligence, and savvy. The non-competitiveness in the hierarchy can be explained with more factors. At one hand, only supervision cost of more simple work and standardization is low. The control of the activities needing unique phases and substantive decision is so expensive that it is more reasonable to sub-contract it. On the other hand, the big living labor-intensive works in the agriculture are tied to seasons. Thirdly, in the Taylorist hierarchy competency is wasted as the employees are enforced into the role of a simple executor and only small part of their knowledge is exploited.

Industrial type production and labor discipline are inseparable and this

¹⁰ Zoltán Tószegi, "A vállalati belső mechanizmus korszerűsítése az állami gazdaságokban" [Modernization of the Internal Mechanism for Corporations in the State Farms] In Gazdálkodás, XXVIII. évf. 12. (1984): 2.

¹¹ Erzsébet Tóth, "A mezőgazdasági vállalatok belső érdekeltségi rendszerének jellemzői és a fejlesztés irányai" [Features of the Internal Interest System for the Agricultural Companies and the Development Courses.]. In *Gazdálkodás*, XXX. évf. 3. sz. (1986): 60.

¹² Tibor Kuczi, "Taylorizmus a mezőgazdaságban?" [Ís Taylorism in the Agriculture?]. In Emberek és intézmények. Két zsákutca az agráriumban, ed. Juhász Pál (Budapest: UMK-Jelenkutató Alapítvány, 2006) 14–17.

would have been reached with the help of Taylorist labor organization. One of the most important attitudes in organized work was discipline: adaptation to the accurate condition system of the content, duration and method of working. Another important task was the radical change of the way of thinking of both the experts and physical workers as well as breaking with the earlier habitual practice.

Because of the agrarian technical revolution, not only the capital intensity of the agriculture multiplied in the developed western states but also inside of this the small ventures based on family work became the most capital intensive. In Hungary, the situation was conversely: capital supply was not worked out based on capital efficiency, but it oriented to the ideological hierarchy. Food producing small ventures could not obtain up-to-date technology and got only half of the sum given to the cooperatives, which was regarded as ideologically superior.

It is very important to emphasize that greater capital intensity did not mean capital cost. Depreciation and reparation cost of the machines and equipments used by the owners are much less than used by workers. Agricultural machines are used in the open air, far from supervision, under such conditions that their deterioration depends on whether the reparation and replacement is paid by the operator or the employer.¹³

In course of the intensive professional production, such disadvantages of the socialist system were implemented more and more, as were indifference, estrangement from the consumers and the underestimation of small amounts. So humanization of the work became an important element of the leaders of the farm being constantly in the foreground. In the professional environment, a small mistake could cause great deficiency, and could endanger production in a significant degree. Important edification such as the enforcing and monitoring labor efficiency provided facilities for the agriculture different from the industry. In the agriculture, the work took place on diffuse locations so controlling and supervising the employees is not very efficient and is very expensive.

As in a resource-limited planned economy the mobilization of the population capable of working could be regarded as total, there were no workforce reserves. So it meant important task to create interest in order to entice the workers and keep them besides harder working conditions. Socialist wage regulation prescribed fairly complex formulas directed by the theory of income equalization, which weakened the lucidity of the system. This blunted the urging effect in itself. Besides this, the incidental, ad hoc type interventions were frequent in the financial situation of the companies in order to take the best part of the "too high" incomes and to compensate the losses caused by "objective difficulties".

The "classical interestedness factors" (wages and direct incomes) could not be brought on financial stimulation because of the tight differential barriers. Low wages either did not magnetize employees, or could not take their roles inside the

¹³ Kopátsy, Sándor: Húsz év után [After 20 Years] (Budapest: Pénzügykutató Rt., 1989) 107.

enterprises. Therefore, the only mean of financial stimulation could be second economy. Incomes from the household plot became regular and significant from the seventies and it also turned the migration earlier experienced about, with magnetizing the country. The non-competitive wages had to be completed with special, non-financial stimulation by the companies.

Conclusions

In Hungary, the successful change of the production profile served as the basis of success. Among its conditions, they found important to create the human, spiritual conditions, the victory of the affected over the material and political support. As the logic of internal and external planning differed, it meant advantage that in fields of poultry-farming their value judgment agreed, so its end-product proved to be well-saleable in world market. The success of the program led to further strengthening of the belief of "positive effect of size profitability" and put the stamp on to the reconstruction of the sector proportions of production and agriculture. As the "forced" big enterprise frame not adjusting to the type of the activity in many cases was not effective, the reconstruction in such ways went with many disadvantages. The one-crop corn growing, the ecological conditions, the basic century-old agrarian technological rules, the compensation of the negative effects with chemicals necessarily increased the industrial dependence of the agricultural production, increased their costs with the rise of the industrial prices and started a deteriorate process by soil. Another time because of the characteristics of the products the advantage of the great organization, the closed technological systems, and the specialization could not succeed, e. g. in the case of sheep-farm.

Special attention was paid to the mechanical improving activity. They particularly dealt with this sphere. Mechanical development was related mainly to buying western licenses and know-how, which they developed on. The relations with western companies had an important role until the end. The purchase and use of developed western technique also helped the change of production profile and rise of educational standard of the workers (the training of the workers often went parallel with the installation of new machines) but often the improvement of quality.

Development of the Hungarian agriculture in the second half of the 20th century can be characterized with the apace rise of direct (fuel) and indirect (chemical fertilizer, pesticide, machine etc.) energy input. The proportion of the materials having industrial origin in the total materials utilization of the agriculture was evanescent in the beginning of the sixties but it came near 60 per cent in the middle of the eighties (see Table 1). This was also followed by the revolution of the land structure, concentration, centralization, advancement of size and with this also a drastic reduction of diversity, and variegation.¹⁴

Table 1: Input-output price index (per cent)

	Index (1980/1975)	Index (1988/1980)
Procurement price of agrarian products	124,4	135,8
Price of means of production with industrial origin	145,8	149,8

Source: Éva Szabóné M., Helyzetkép a mezőgazdaságról. Statisztikai Szemle. 69/1 (1991): 38.

Hungarian large-scale farming reached undoubted successes in the fields of crop averages and yields. Contrary to this, the fallback was huge as regarding costs and economic effectiveness. This could be traced back to three causes:

- Large-scale farming was assets intensive and assets stand deteriorated rapidly. In the case of developed western countries, the owner's interestedness gained more and more ground: how they honor machines, how they economize materials, how they adapt to the changing schedule, what kind of consideration they had towards work, and how big the losses are during work.

At the same time in Hungary

- Large-scale farms operated with much larger administrative burden than their competitors did. In modern western agriculture, people having administration as main job were evanescent, which resulted in cost-cut. Contrary to this, socialist agriculture set up a claim for bigger administration so we can state that here the situation is the worst as regarding the unfulfilled consequences of the agrarian technical revolution.

- The environment of the external economy radically changed. The boom in energy and stuff prices radically changed Hungarian foreign trade price conditions. World market price moves, although being delayed but appeared in rouble settlement trade because of the switch to five-year crawling price basis. Therefore, in 1975 import price level in this relation increased more than 25 per cent while that of the vehicle of energy duplicated. As result, the costs of the energy-intensive agricultural systems were significantly affected.

The industrial-like production and technology configured in the large-scale agriculture proved to be a method firmly claiming energy and industrial material. This also contributed to the fact that producer utilization increased more rapidly than gross production so the proportion of net agricultural production – and its

¹⁴ See Zsuzsanna Varga, The Hungarian Agriculture and Rural Society: changes, problems and possibilities, 1945–2004 (Budapest, Szaktudás Kiadó Ház, 2009).

¹⁵ Mária Barát, A magyar gazdaság vargabetűje. [Detour of the Hungarian Agriculture] (Budapest: Aula, 1994) 157.

value as well - decreased. 16 The effectiveness of the investments used in order to expand agricultural production became more and more hard. Contrary to this greater efficiency, demand did not appear in the arrangements of economic policy, while the constraining effect of the restoration of the trim prevailed.

While the growth conditions in the sixties can be characterized by the existence and accumulation of the production factors being at the command relatively at a low price and abundantly, the flare of international relations and broadening of the markets, the changes of the world economy in the seventies and eighties exaggerated and revealed the vulnerability of the allocation systems. 17

Abstract: Success and Failure of the Hungarian Agrarian Model, 1960-1990

In the centre of the analysis stands the agricultural reconstruction of the sixties and seventies, moreover the eighties when the crisis of the Hungarian agrarian model emerged, and demands for economic and also political reforms could be felt. The aim of the essay is to demonstrate the characteristics of industrial like productive systems gaining ground in the Hungarian agriculture from the beginning of the sixties. The article concentrates upon the emphasis and analysis of those factors which determined the offset and development of the new production organizing form in a special way. It presents what role industrializing played in the evolution, successes and failures of the given development models, and what agent role it played in the enterprise system established in the sixties and seventies and in the organization of different integration forms. In the end, the history of industry like agriculture - as an outbreak attempt - can partly give an answer to the deeper correspondences of the operational problems of the socialist economic system.

Keywords: Rural Development, Socialist Agriculture, Green Revolution, Innovation,

Professional Agriculture, Production Systems, Taylorism.

András Klenczner, "Új vonások az állami gazdaságok gazdálkodásában" [New Features of the Management for the State Farms.]. In Gazdálkodás, 11(1982): 22.

¹⁷ Zsuzsa Bekker, Rendszerválság. Alkalmazkodási folyamatok a kelet-európai országokban 1970-1990 között. [Crisis in the System. Adjustment Processes of the Eastern European Countries between 1970 and 1990] (Budapest: Aula, 1995) 147.