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The Socialist-Type Process of Innovation

Lessons of Hungarian Agrarian Modernization between 1960 and 1990*

This article analyses the role and the possibilities of innovations in agriculture during the socialist era in Hungary between 1960 and 1990. The introduction of the established industrial-type production systems ushered in significant changes in Hungarian agriculture in the 1960s. The most spectacular changes were increasing outputs and improvements in the food supply. The spreading of high-yield stocks and the adoption of intensive technological procedures helped improve production.

The first part of the paper uses J. A. Schumpeter's basic definitions of innovation as a guideline to examine the particularities and limitations of socialist innovations as illustrated by the example of the introduction of industrial-type production systems. It highlights and analyzes the factors that exerted a particularly decisive influence on the launch and progress of a new and distinctive form of organizing production. Since the innovation had been institutionalized because of political resolve through central control based on the planned economy, I analyze the features of the relationships between politics and the economy, which were shaped by the politicians and the innovators.

Finally, I examine how political resolve and the inability to revise policies created a kind of path dependence in the 1970s in the socialist countries, while economic and technological development showed much more flexibility within the capitalist countries during the economic crisis.

Keywords: Hungarian agriculture, innovation, industrial-like agriculture, path dependence, New Economic Mechanism

There is a comprehensive consensus in the secondary economics literature according to which capitalism has a strong tendency toward innovation, whereas socialism makes innovations impossible and this is a specific feature of the system. The main value of capitalism is the eager encouragement for entrepreneurial inventiveness and innovative processes, and the best prerequisites are competition, decentralized initiatives and huge rewards for success. In contrast, the socialist economic system did not inspire innovations because of

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a lack of competition, low rewards and centralized policies dictated by political factors. This limited the number of innovations and rendered the socialist countries incapable of adopting and adapting innovations without significant delays in a wide range of areas.¹

Handbooks describing the socialist system lay emphasis on the fact that it was unviable because it made innovation impossible. The system did not inspire innovation during an era of crucial technological advancements. Since there were risks involved and they had unpredictable outcomes, the production units persuaded themselves not to embark on such enterprises, or they were advised by higher levels of administration against any kind of risky business. Given the absence of innovation, the only source of growth remained savings, which were forced by budgetary considerations, and the investment of these savings into production. Later the system was sustained with foreign loans, but eventually planned economies collapsed under the weight of debts. Another option was to reach a positive balance of trade by adopting the “Ceaușescu way,” which essentially meant exporting anything of value on the foreign markets, but this went hand in hand with pauperization, which ultimately undermines the legitimacy of the system.

Thus, the failure of the system is directly linked to its paternalism and the soft budget constraint syndrome. The meaning of paternalism is the following according to János Kornai: “If certain areas of the economy have financial difficulties, then the state will assist them and the government budget will take over the liabilities.”² Thus, it creates a soft budget constraint, and this budget constraint helps the public companies survive despite sustained losses, because the state comes to their rescue again and again. Moreover, the system primarily benefited underachieving companies and sectors, because they got the most support from the state through the redistribution between various companies. Therefore, a built-in tendency towards counter-selection prevailed, in which efforts were primarily aimed at state allotments and not maximizing profits.³

While it is worth taking risks and accepting research costs to develop innovations in a market economy (which, if successful, significantly increase the market value of the company), the budget in a socialist system immediately swallows any excess profit. Eventually, the executives and employees of a socialist

1 János Kornai, “Innováció és dinamizmus. Kölcsönhatás a rendszerek és a technikai haladás között,” *Közgazdasági Szemle* 1 (2010): 13–15.

2 János Kornai, *A hiány* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1980), 578.

3 *Ibid.*, 581.

company are better off without innovation, because they achieve the same results (the same wages and development opportunities) with less investment. At the same time, not only are the low level of socialist innovation and the lack of expeditious introduction of new technologies explained by an array of factors, but these factors are interconnected in a complicated, hierarchical way.⁴

By examining the history and processes of socialist agrarian modernization, I seek to study the efforts that were made within the sector to address the system's dysfunctional features and the extent to which these efforts contributed to the success of an endeavor or the creation of the necessary prerequisites for success. In the early 1960s, a technological shift based on West German standards and the creation of the material and technical foundations for industrial-like agriculture raised Hungarian agriculture to the highest level in the world.⁵ The most spectacular changes were illustrated by growth in outputs and improvements in the food supply. The spread of high-yield stocks and the adoption of intensive technological procedures helped increase production. The potential of Hungarian agricultural production was significant even in international comparison. The average yield of wheat and corn matched the French, Danish, American or Canadian results, and meat production was also among the best in the world.⁶

In the early 1920s Ludwig von Mises pointed out that instead, while Marx had predicted the emergence of global socialism and the creation of a socialist commonwealth, in fact socialist countries found themselves compelled to copy the production methods, products and technologies of capitalist countries.⁷ Hungarian innovation meant first and foremost copying or adopting technologies during this period, and of course the socialist agrarian innovation could not have been implemented without capitalism, more precisely without the revolution in agrarian technology that was taking place in Western countries.

4 János Kornai, Eric Maskin, and Gérard Roland, "A puha költségvetési korlát," *Közgazdasági Szemle* 9 (2004): 777.

5 Zsuzsanna Varga, "Conflicts and Compromises between the Hungarian Socialist State and the Peasantry: Contextualising the "Hungarian Agricultural Miracle" in *Integration through Subordination. The Politics of Agricultural Modernisation in Industrial Europe*, ed. Peter Moser and Tony Varley (Turnhout: Brepols, 2013), 203–22.

6 Józsefné Németh, *A magyar mezőgazdaság európai összehasonlításban* (Budapest: Központi Statisztikai Hivatal, 1985), 20–23.

7 Ludwig von Mises, *Economic Calculation in the Socialist Commonwealth* (Auburn, Ala.: The Ludwig von Mises Institute, [1920] 1990).

In my examination of the particularities and limitations of socialist agrarian modernization, J. A. Schumpeter's following basic cases of innovation serve as a guideline:

- a) The introduction of a new and in that particular sector practically unknown production procedure, by no means based on new scientific findings, which can be a new commercial process in connection with some kind of goods.
- b) The production of new—that is, for consumers as yet unknown—goods or production of certain goods in new qualities.
- c) New settlement opportunities or the opening up of a market, in which that particular branch of industry of this country had not been present earlier, regardless of the incidental previous existence of the market.
- d) New sources of supply of raw materials or semi-finished goods: it is irrelevant, again, whether the source of supply already existed but was ignored, was not considered appropriate, or had to be created.⁸

Innovation was institutionalized because of political resolve through central control based on the planned economy. The innovative ability unfolded in economic sectors, which from some point of view had been chosen by economic planning. The socialist system had some very distinguished features, different from other systems, and these features showed an interior unity. The elements of the system were interlocked, but at the same time they were preconditions for one another. Some traits were considered more fundamental than others, and they were unquestionable elements, such as state ownership or the autocracy of the communist party, and this determined other, less fundamental, so-called “derivative” features, for example paternalism and pathways chosen by the political elite. These factors had a destructive effect on the mesospheres and microspheres of the economy and society such as empty generalities, superficial terms, obscured responsibilities, scapegoating and equivocation, buck-passing and obfuscation. On a theoretical level, the logic of socialist innovation raises a few questions based on the above:

– Did the new or redesigned product have any strategically important feature that made it a military product rather than a civil one?

– Could the product play any special role in the procurement of oil, which was essential?

⁸ Joseph A. Schumpeter, *A gazdasági fejlődés elmélete* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1980), 111.

– How to make an innovator interested in undertaking a costly and risky innovation in an egalitarian socialist system, in which any extra profit of the companies would be drained by the state itself?

– What kind of political power did an innovator need in order to pursue plans for innovation?

The study illustrates the system-specific features of socialist agrarian modernization and the obstacles to the introduction of innovative production. It also presents the efforts made to eliminate these hindrances. It is also important to see what the roles of the system's basic and "derivative" features were, as well as the importance of the introduction of market elements (which were alien to the system) in the success of the so-called "role-model companies,"⁹ which were prominent in the field of production innovation.

Basic Cases of Innovation in Hungarian Agriculture between 1960 and 1990 Agrarian Technical Revolution

In the 1950s, significant changes took place in the agriculture production techniques of the Western world. The transformation, referred to as the "green revolution," increased productivity in many fields. Industrial-type production systems made agriculture dependent on external material input and resources. At the same time, artificial systems were created in order to make processes independent of environmental factors.¹⁰ With the industrial, energy-intensive agrarian system, which utilized a significant amount of artificial material and energy of industrial origin, the logic of industry (closed spaces under human control, processes based on functional connections etc.) emerged in agriculture as an ideal. This resulted in independence, artificial control, and the gradual replacement of natural resources by artificial resources as the basic aspirations of the new vision of agriculture.

Agricultural technical development is a perpetual, complex, consequential and purposeful form of innovation, which has an effect on the elements of agricultural production (arable land, manpower, capital goods) because it causes qualitative and quantitative changes and it results in more efficient agricultural production of higher quality.

9 The two most renowned role-model companies on the Hungarian agriculture scene between 1960 and 1990 were the Bábolna State Farm and the Nádudvar Red Star Cooperative.

10 Robert E. Evenson and Douglas Gollin, "Assessing the Impact of the Green Revolution, 1960 to 2000," *Science* 2 (2003): 758–62.

The general basic features of industrial agriculture are the following:

– It focuses exclusively on production tasks in accordance with the principles of achieving independence and at the expense of other roles of space (biosphere and social habitat); solutions and technological procedures are selected on the basis of their productivity, effectiveness and economic efficiency.

– To this end, it aspires to concentration and centralization, increases the (factory, field and machine) scale, strives to create as large and “homogeneous” areas as possible, and seeks with these methods to make “central control and manipulatedness” and “process control” more effective.

– Its basic method is to transform the environment according to the demands of the specified tasks and activities; that is, it shapes the space to the task, without attempting to adjust activities to the environmental attributes.

All the above result in a greater extent of intensive artificial resource expenditure.¹¹

In Hungarian agriculture a true technical, technological revolution took place beginning in the early 1960s. The primary goal was to reconcile political adequacy and economic rationale. During this period, attempts were made to introduce Western systems of production organization without deviating from *socialist* ideological approaches.

The successful adaptation of new technologies was a pressing necessity, because agricultural output had been considerably decreased as a result of collectivization, which led to a disinterest among the participants involved in cultivating land and a lack of machines and experienced managers. Frequently, soldiers and students were sent to harvest the crops during the busiest periods, but even so Hungary had to import a significant amount of wheat and corn between 1960 and 1962, which had a significantly adverse effect on the balance of trade. Asset requirements of agriculture were increased markedly by the reorganization. Nearly nine-tenths of the agricultural investments had to cover the replacement of lost small-scale agricultural production power between 1958 and 1968. At the same time, the higher operational costs of the newly created large-scale works had to be covered as well.

Reform efforts in agriculture began earlier than the adoption of the New Economic Mechanism, which was introduced in 1968.¹² The farm machinery

11 József Ángyán, *Az európai agrármodell, a magyar útkeresés és a környezetgazdálkodás* (Budapest: Agroinform Kiadóház, 2001), 106–07.

12 Zsuzsanna Varga, ‘The ‘Modernizing’ Role of Agriculture in the Hungarian Economic Reforms,’ in *Zur Physiognomie sozialistischer Wirtschaftsreformen. Die Sowjetunion, Polen, die Tschechoslowakei, Ungarn, die DDR*

pools of the state began to close their gates in 1964, and all of the machines had made part of the cooperatives by the end of the decade. The conditions in the cooperatives and the state farms steadily improved, and the individual plants started to become independent due to the decentralization of the central planning. The total volume of investments in the agricultural sector was increased and producer prices were raised (by 10 percent in 1966 and again by 10 percent in 1968).¹³ Skilled workers had been trained in large numbers, and high-level engineering schools were organized. Institutions of higher education that had been closed were reopened (e.g. in Debrecen, Keszthely, Óvár). 1967 bore witness to important institutional reforms. Four countrywide high authorities were merged into a single coordinating body, which was called the Department of Agriculture and Food, and a representative body for agriculture was created, the National Council of Cooperatives.

From this time on, the new organization replaced the fragmented control system and was able to represent the interests of agriculture more effectively.¹⁴

The results of these changes included improvements in the food supply and the radical transformation of the work conditions and living conditions of agricultural workers.

The spread of high-yield stocks and the adoption of intensive technological procedures resulted in a spectacular improvement in the yield of certain products.¹⁵

Product Restructuring and Economies of Scale

Two Successful Branches: Poultry and Corn

The socialist ideology forced a change in production proportions, encouraging segments with higher efficiency and rapidly raising agricultural output. Hungarian agriculture made outstanding achievements in two areas between 1960 and 1990: poultry and egg output and corn production.

und Jugoslawien im Vergleich, ed. Christoph Boyer (Frankfurt am Main: Max-Planck-Institut für Europäische Rechtsgeschichte, 2007), 201–18.

13 Zsuzsanna Varga, “Agriculture and the New Economic Mechanism,” *Hungarologische Beiträge* 14 (2002): 205–06.

14 Pál Romány, “Az Agrárpolitikai Tézisektől a Nemzeti Agrárprogramig” in *A magyar agrártársadalom a jobbágyság felszabadításától napjainkig*, ed. Péter Gunst (Budapest: Napvilág Kiadó, 1998), 390.

15 István Orosz, “A modernizációs kísérletek főbb szakaszai a magyar mezőgazdaságban a XIX–XX. században,” *Múltunk* 48, no. 2 (2003): 249–53.

Poultry provided a good basis for qualitative production in livestock-breeding. The poultry branch had experienced a significant technological revolution during the 1950s. This sector was the first to consequentially apply industrial solutions, and these solutions raised poultry stock-farming to a high production-value level. State allotments established the conditions for economical production. From the perspectives of forage valorization, manpower and investment payoff, making poultry products is a very economical process. As a consequence of the great prolificacy of poultry and generational rotation, the production cycle is also quick, making it possible to produce large amounts of meat every year. The remarkable ability of poultry to adapt makes it stable on every level of industrial production. This sector provided meat production in the largest amounts in stable qualities at the lowest prices during the shortest time. With large-scale organization of poultry meat and egg production, the economic and political profiles became compatible with each other. Creating and expanding the complex breeding and farming technology required a comprehensive international and domestic division of labor, ample room for maneuver and a free rein in many respects. Even the opening of Hungarian agriculture towards foreign countries was in fact connected to this sector.

The theoretical and practical foundations of industrial poultry farming were built on Western and in particular German models, resulting in the establishment of the first systematically organized agricultural sector in Hungary. Egg production started with Lohmann-type poultries imported from West Germany. This was followed by the organization of the construction of new poultry stables appropriate for the emerging closed-production system. By cutting off or artificially rationing the elements of the natural environment, it became possible to measure continuously and regulate every production factor.

Until the end of the period under examination, poultry breeding played the largest role in Hungarian large-scale livestock farming, coming closest to matching levels of quality in leading countries. Thanks to poultry farming, Hungary became an important player in agricultural innovation. This sector was the most successful in catching up with the accelerated pace of production. As a consequence of the significant domestic supply and relatively low prices, domestic poultry meat and egg consumption skyrocketed.¹⁶

16 András Schlett, *Sziget a szárazföldön. A Bábolnai Állami Gazdaság története 1960 és 1990 között* (Budapest: Szent István Társulat, 2007), 64–65.

Significant changes were made in crop production as well. While a group of arable crops, namely the more mechanized and high yielding varieties, expanded their acreage, the size of regions assigned to other species shows a significant reduction beginning in the 1960s. The total area devoted to the production of wheat, corn, lucerne and sunflower was two and half times larger than the other species' area of production between 1961 and 1970. This rate was increased to 4.3 times by 1972, causing a substantial simplification in the sowing structure.¹⁷

Although the closed system of professional commodity production was first developed in poultry product turnout, hybridization as one of the main incentives was taken over by poultry farmers from corn production. As early as the 1960s, corn attracted the attention of experts examining the potentials of intensive industrial production, since the success of large-scale livestock breeding was significantly influenced by forage maize. Among the cereals, this plant has the greatest productivity and contains the most energy in a functional unit. Because of these two attributes, it was the most appropriate for the realization of the aims of the corn and meat program announced by the political leadership. Successful examples of effective production within large-scale frameworks were found in the USA and Yugoslavia, so focus was placed on the adoption of procedures that had been used in these countries. The Garst Farm in Iowa participated directly in the creation of the Hungarian system and transported hybrid seed-corns, but later Yugoslavian and Hungarian intensive varieties of seed-corns were cultivated in large areas as well.¹⁸

In Hungary corn became the primary plant for the imported production systems in the cultivation of arable crops. The main attribute that made it appropriate for this was its high tolerance for monoculture. The average yield increased by 25 percent per hectare from 1970 to 1980.¹⁹ Experience, however, showed that within a relatively short time monoculture resulted in various problems, the neutralization of which required considerable financial sacrifices.

17 KSH, "Fontosabb gabonafélék vetésterülete 1921–2014. Agrárcenzusok – Hosszú idősorok – Táblázatok," accessed November 27, 2015, https://www.ksh.hu/docs/hun/agraar/html/tabl1_4_1_5.html; Albert Kiss, "A mezőgazdasági termelés struktúrája és anyagi-műszaki megalapozottsága," in *A mezőgazdaság fejlődésének szocialista útja. A legutóbbi két évtized mezőgazdasági tapasztalatai tükrében*, ed. Károly Girus and Péter Simon (Budapest: ELTE BTK, 1982), 27–29.

18 Józsefné Németh, *A magyar mezőgazdaság európai összehasonlításban* (Budapest: Központi Statisztikai Hivatal, 1985), 108–09.

19 KSH, "Fontosabb ipari növények termésmennyisége, 1921–2013 Agrárcenzusok – Hosszú idősorok – Táblázatok," accessed November 27, 2015, https://www.ksh.hu/docs/hun/agraar/html/tabl1_4_2_3.html.

They included the unfavorable physical-chemical and biological alterations of the soil. The rapid spread of certain resistant weeds connected with monocultures (e.g. Canary grass) and the accumulation of chemical residue caused several problems. The shortening of optimal time meant further disadvantages in production during the cultivation and harvest time.

As was true in the case of livestock breeding, the emerging production systems' main feature was the full scale organization of production. This involved the whole process, from habitat selection, soil testing, and growing trials to production technologies based on the latest scientific knowledge and corn for the markets. This purpose was served by mechanization, which called into being the notion of production units, making them widespread in production systems. Creating such blocks within mechanization made processes more transparent and therefore made the organization of work easier.

It is important to mention that there were attempts to introduce industrial production in other areas, too, but most of them failed. For example, the principal mistake in the introduction of industrial pork production was the mechanical imitation of the poultry farming program. Thus, the initial phase—farrowing, early selection (28 days)—took place at the system center, which is the most crucial part in pig farming. It turned out that not every aspect of poultry farming was suitable to pork production, since although the most difficult part of the process, the incubation period, could be managed extremely well in the case of poultry, this period generated numerous further problems in the case of swine.

The industrialization of sheep farming ended in spectacular failure, as it was less compatible with the biological capacities of the animals. The industrialization of production meant that the animals were kept on closed stepping grids that caused foot problems and lameness within a short time, so sheep were later fattened under traditional circumstances but with intensive fodder supplement. Both failures were illustrated by the experiments of the leading agricultural enterprise, the role-model Bábolna farm, in the early 1970s.²⁰

External Relations

The Kádár regime decided to make a significant change in its economic policy in the early 1960s after the 21st Congress of the Communist Party of the Soviet Union (January 27, 1959–February 5, 1959). They thought it was necessary to

²⁰ Schlett, *Sziget a szárazföldön*, 66–71.

loosen the one-sided economic dependency and set the economy right.²¹ For this purpose, the relevant public authorities sent experts to various West European countries, commencing preparations for the adoption of advanced West European technology. The process was sped up by the political détente at the time, which especially facilitated the East–West economic relationship within Europe.

The business policy of agriculture in socialist Hungary was built on three main markets. External trade relations with the other socialist countries, especially the Soviet Union, Czechoslovakia, the German Democratic Republic (GDR) and Poland, had gradually extended over the years. Cooperative endeavors were undertaken with companies from European capitalist countries to improve exports to Western countries and create independent livestock breeding. The dynamically developing Middle Eastern countries became more significant export markets in terms of currency volume. For example, almost 30 percent of the Hungarian poultry export headed to the Middle East.²²

Technological innovation was connected primarily to purchases of Western licenses and know-how, which were then further “developed.” Relations with western companies had an important role. The procurement and utilization of advanced Western technology also helped further changes in production structure and quality improvement.

Along with machine purchases, the selected companies (the so-called model farms) also strived to foster cooperation with the more advanced Western firms (e.g. in the area of joint developments). Company managements became more ambitious as they got acquainted with the level of Western technology. Their relationships facilitated the adoption of modern organizational and management principles. The joint ventures helped create close relationships with Western firms.

The accumulated knowledge, methods, breeding and growing procedures generated by various external market relations contributed greatly to the development of industrial-like production systems. The know-how was achieved primarily through the everyday practice of commercial cooperation with foreign partners during the various stages of livestock breeding and the production of goods. Several cooperative endeavors were established with advanced Western companies and joint ventures were also founded. They served as bases of information in exploring the fields of breeding, technological development, and

21 Zsuzsanna Varga, “Nyugati nyitás a magyar agrárpolitikában az 1960-as években,” in *A történettudomány szolgálatában. Tanulmányok a 70 éves Gecsényi Lajos tiszteletére*, ed. Magdolna Baráth and Antal Molnár (Budapest–Győr: Magyar Országos Levéltár, 2012), 863–71.

22 Géza Gajdos and András Éliás, *Az agrár-külpiac megítélése* (Budapest: AKI, 1978), 5–12.

changes in the market. Similarly, they had an invaluable role in the acquisition and testing of the latest tools, procedures, and breeds and in the training of experts from Bábolna. Joint ventures made integration into Western market conditions easier, and these ventures thus supported self-maintenance during the early critical phase. It is important to note the critical pressure of international commercial competition, which gradually brought a qualitative agricultural perspective into prominence. Target areas, volumes and time sequences of export were varied by types of goods.

The distinctive feature of the poultry product group in the 1970s was that roughly 80 percent of its export went to *non-ruble-based* markets. This significant rate of export to non-ruble-based markets was also strengthened by the Soviet Union itself, which as the largest consumer in the 1970s often purchased for dollars. By and large, in the second half of the 1970s, about 40 percent of slaughtered poultry was exported to the Soviet Union, 21 percent to the Middle East and 17 percent to the countries of the Common Market. In 1983, these rates changed to 57.2 percent, 4.3 percent and 13.5 percent, respectively.²³

In terms of export volume, the following countries had significant roles: socialist countries (the Soviet Union, Czechoslovakia, the GDR and Poland) and the developing Northern African and sub-Saharan African countries, as well as the Middle East (Iraq, Algeria, Libya, Egypt, Angola, Lebanon and Iran). In the case of European advanced capitalist countries (e.g. Austria, West Germany, France, Switzerland and Italy), the main goals were market presence, understanding of the value judgement of markets with the highest standards, and remaining up-to date and well-informed. Western import was aimed at the permanent maintenance of a part of domestic propagation and variety selection, commercial and professional contact, and in some cases cooperation with the best breeder companies in the world.²⁴

The process outlined above strengthened the openness of Hungary's foreign trade structure, although at the time it balanced the proportions of COMECON relations (Council for Mutual Economic Assistance, 1949–1991) with the so-called hard currency relations in foreign trade traffic. Hungary became a transit country for advanced technology towards COMECON countries. The Western part of Europe extended its outlets towards the East. Hungary, on the other

23 *Mezőgazdasági Statisztikai Évkönyv 1986* (Budapest: Központi Statisztikai Hivatal, 1987), 27.

24 András Schlett, "Zátonyra futott mezőgazdaság. A magyar agrárium külpiaci helyzetének alakulása az olajárrobbanás után," in *Regionális földrajzi tanulmányok. Közép-európai monográfiák*, vol. 7, ed. Lajos Veres (Szeged: Egyesület Közép-Európa Kutatására, 2013), 121–23.

hand, was able to import advanced technology and modern consumer goods in exchange for export based on the use of (at the time) cheap energy imported from COMECON countries.

Organizational Changes and New Organizations

After the 1956 Revolution, there were two goals in the agrarian sphere: on the one hand policies were designed with the intention of improving living standards and making production more effective. On the other, the same policies were also intended to prove the legitimacy and advanced state of large scale production, and the two goals were intricately intertwined.²⁵ However, in the early 1960s, forced collectivization reduced agricultural production by 10 percent. It became obvious that full scale technological reconstruction was needed for any significant advancement that might help ensure proper supplies of foodstuffs and raise living standards under the new conditions.

The fundamental changes in the structure of estates, which essentially meant concentration and centralization, resulted in a drastic decline of diversification and variegation. While in the developed capitalist states the average farm size in agriculture decreased due to the technical revolution, Hungary was characterized by an increase in farm size that at times was abnormal. In the 1970s, huge company unifications took place in agriculture. Between 1970 and 1979, the number of state farms dropped from 184 to 131. The average area of a state farm, however, increased from 5,548 hectares to 7,598 hectares.²⁶ In Hungary, great agricultural entities evolved that had never been seen before. Their production value matched industrial corporations. Within the state farms vast sectors evolved and industrial and accessory activities also strengthened agricultural production. Almost one-third of the activities of every big farm were not closely linked to agricultural production. The agricultural entities and the first combinations evolved in the early 1970s in Bábolna, Agárd, Bóly and Mezőhegyes. “The bigger the better” principle also had the support of technocrats, but they only optimized the operating hours of the machines and the volume of the cultivated areas, not the production costs.

25 Zsuzsanna Varga, “The Impact of 1956 on the Relationship between the Kádár Regime and the Peasantry, 1956–66,” *Hungarian Studies Review* 34, no. 1–2 (2007): 155–76.

26 Ernő Csizmadia, “Folytonosság és változások agrárfejlődésünkben a nyolcvanas évek elején,” *Agrártudományi Közlemények* 40 (1981): 108–19.

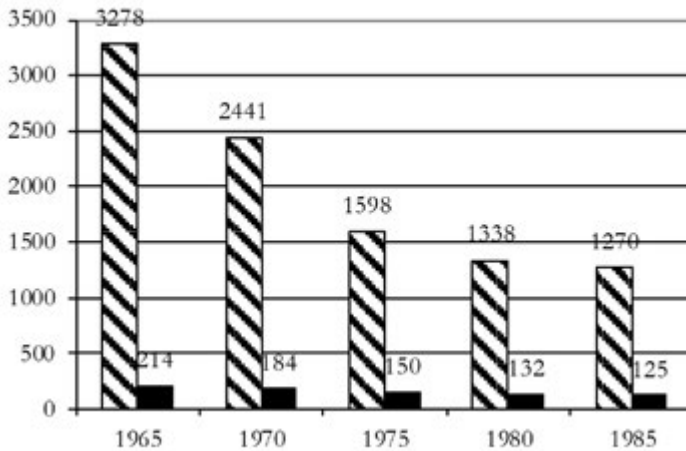


Figure 1. Changes in the number of cooperatives (striped) and state farms (black)

Source: László Csete, *A termelőszövetkezetek és az állami gazdaságok fejlődése* (Budapest: AKI, 1985), 9–10.

In cases of combinations, the main profile activities were not confined to single sections of agricultural production. They comprised the formerly separated sections of output, such as production of capital goods, production of agricultural raw materials, and processing and sale of stock, and they validated them in the same enterprise domain. The company organization that was established had to undertake complex development in its field of activity as well. This could be attained with development work using wider-range research and academic achievements, intense concentration of production and partner relationships.²⁷

In agriculture, in addition to the centralization process, the integrating activity of big farms became a characteristic developmental trend. The increase in company size was replaced gradually by horizontal and vertical relations. Higher level types of organizations (systems, integrated associations) were formed. New types of cooperative forms were created and the process of production concentration and specialization was given new content. In agriculture, enterprise systems came into being with many functions and rich profiles.

The existence of production innovation assumed changes in factory organization, and it was accompanied by a spread of different association forms

27 András Klenczner, "Új vonások az állami gazdaságok gazdálkodásában," *Gazdálkodás* 11 (1982): 123.

in agriculture. These had significant tasks in the development of technical and technological innovation. The role of the system center as a center of innovation was based on the complex genetic, technical-technological and farming system, in which research development played an increasingly important role. The most characteristic feature of the cooperative process was that certain previous company functions were often separated from the framework of companies and found another niche on another organizational level of integration. The production systems represented technological and organizational innovation, and most of them operated as an organization spreading innovation.

The combinations and state farms integrated more and more lands, giving rise to enormous production volumes, while they further developed agriculture and food industry and different industrial activities. They played significant roles in the evolution of productive systems. They helped further the spread on a wide scale of up-to-date techniques and technologies through the emerging production systems.

In the 1960s, the production systems became one of the pillars of the Hungarian agrarian model. The selected state farms cooperated with research institutes and companies that produced and sold agricultural means of production, as well as processing plants, and they developed a complex production technology for a specific branch (for example maize) within the framework of this distinctive form of production organization. The farms could join the production systems, and they got the necessary technologies, machines, chemicals, seeds, consultancy and training based on the up-to-date research achievements in exchange for a fee and surplus yields. The main task of the members of the system was securing production, and they were guided by an administrator. The members did not do research and did not make experiments, but they helped further the research of the system center by sharing their production experiences. The system center worked like a supply organization, and the supply activities generated income. The industrial-like poultry meat and egg production system of Bábolna demonstrates the size of the system. It contained 195 member farms in 1987, and they produced 162,000 tons of poultry meat and 1,650 million eggs. The Industrial-Like Maize Producing System's 264 member farms produced maize on 220,000 hectares and wheat and other cultivated plants on 349,000 hectares.²⁸

28 Schlett, *Sziget a szárazföldön*, 148.

Loyalty and Competence: the Managerial Revolution and Pressures of Innovation

The overdetermined role of the political regime dominated the planned economic system in terms of the social subsystems. The political power determined all movement and evolution within the social spheres and thus hindered any attempt to develop specific laws or arrive at rational approaches to internal questions. Socialist redistribution replaced market-based decisions with central, official and administrative decisions, thus creating a monolithic, society-wide and predominantly bureaucratic organization as a network of the abovementioned decisions. The bureaucratic political elite decided on the relevant economic and power-related issues. The division of power, which was almost a constitutional principle in the market economics, ceased to exist, as did any division of the economic, political and cultural power.

The steady increasing in levels of consumption became the main political priority in the Kádár regime after the 1956 Revolution in general, but especially following the forced collectivization efforts. It became important to raise production in an ever-increasing way in the interest of improving the domestic food supply, improving the ratio of exports over imports for foodstuffs and increasing the balance of foreign exchange, especially when it came to convertible currency. The value of the products that were necessary in order to ensure the “satisfaction” of the population had been improved, as had the value of the so-called “hard” products in external trade, which were considered competitive goods in the non-ruble-based markets.²⁹ The executives of companies could negotiate for more resources and more favorable figures in the plans when they supplied the political goods, or “political products,” as they were called in agriculture.³⁰

The post-Stalinist regime abolished its political monopoly and made some concessions, especially for the benefit of technocratic intellectuals. Gradually the key decisions came to be made by the managers instead of the redistributors, because the managers controlled the most favorable combinations of economic, cultural and social capital during the post-Stalinist era of socialism. They possessed more favorable combinations than the politocracy, which perhaps had more cultural and social capital, but significantly less economic potential. And the technocratic intellectuals possessed more favorable conditions than the

29 See in detail Katalin Botos, Mihály Patai, and István Szalkai, *Pénzügyek és nemzetközi gazdasági kapcsolataink* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1980).

30 László Bruszt, *A centralizáció csapdája* (Szombathely: Savaria University Press, 1995), 183–84.

intellectuals and far more favorable conditions than possessed by the class of the internally differentiated and weak small entrepreneurs.

Managers and technocrats of the companies selected as the vanguard of modernization became citizens with a kind of dual nationality.³¹ If the political atmosphere became more tense and the ideology exerted an influence on professional circles, then these managers would put more emphasis on their political role, but if there was any detente or the managers were related to professional circles or visited foreign countries, they would stress their professional skills.³²

The economy and society of the Kádár regime was characterized by comprehensive and secret negotiations. The elites developed in the settings of these secret negotiations and thereby seized power. They had to rely on a system of bureaucratic secret deals, whether they liked it or not, if they wanted to advance. Informal negotiating became a kind of ability, but it lost power when considerations of market orientation came into play. Informal connections and negotiations remained important tools in the attainment of goals throughout the period. The subsidies and benefits of state in their various forms were obtained most frequently by companies with representatives who were at the same time members of higher governing bodies.

However the support of the highest levels of government did not mean a permanent advantage. The opportunities enjoyed by companies underwent significant changes when the political climate changed. In the early 1970s, the agrarian sector found itself in a crossfire after its assessment was transformed

31 Róbert Burgert, the head of the Bábolna State Farm, was a member of the Central Committee as of 1966, István Szabó, the president of the Nádudvar Red Star Agricultural Cooperative was an alternate member of the CC as of 1962. Burgert's career was similar to that of Szabó: both received the medal "For Socialist Hungary." Szabó was given the award in 1976, Burgert was given it in 1978. The Presidency of Committee for State and Kossuth Prizes nominated Burgert for the State Prize in 1980. They justified this decision with the following explanation: "For his excellent work in the field of creating and introducing intensive economic means in the last two decades." The Division of Industry, Agriculture and Transportation suggested the Prize be shared with István Szabó. They claimed both of the men had achieved excellent results when they created large-scale production economic systems and inter-economic integrative relationships. The Political Committee discussed the proposals during its session on February 19, 1980, and they proposed the award of two State Prizes, one to Burgert and the other to Szabó (MNL M-KS 288. fond 5/793. MSZMP Politikai Bizottság ülésének jegyzőkönyve). For Burgert's political career see in detail: Schlett, *Sziget a szárazföldön*, 117–26). For István Szabó's biography see Ignác Romsics, ed., *Szabó István életútja Nádudvartól Nádudvarig* (Budapest, Osiris Kiadó 2012).

32 György Konrád and Iván Szelényi, *Az értelmiség útja az osztrályhatalomhoz* (Budapest: Gondolat, 1989), 151–52.

within the circle of economic reform.³³ The orthodox among the elites launched a counter-offensive against the reform. The economic mechanism stopped in its tracks and the increasingly fierce debates between the highest-ranking leaders of the party resulted in great tension. János Kádár visited Moscow between February 11 and 14, 1972. Brezhnev expressed his disappointment about Hungarian growth rates, which lagged behind the COMECON rates, and he made it clear that he was not a supporter of the economic governance system initiated under Kádár in 1968. In addition, he wanted to foster closer connections between the Hungarian and the Soviet economies.³⁴ The Magyar Szocialista Munkáspárt (MSZMP) Központi Bizottsága [Central Committee of the Hungarian Socialist Worker's Party] decided against reforms on November 14 and 15, 1972. The recentralization process had been begun and the National Planning Committee was created to strengthen the central leadership.³⁵

In the aftermath of the changes, the main representatives of the agrarian reformers, including Lajos Fehér,³⁶ and their most important economic political ally, the reformer Rezső Nyers,³⁷ were removed from the leadership.³⁸ In addition, the prominent companies became the main targets of the anti-reform forces, because these enterprises had been the pioneers in the implementation of the economic mechanism.³⁹ The reform politicians of the Central Committee had

33 Varga, Zsuzsanna. *Az agrárlobbi tiündöklése és bukása az államszocializmus időszakában* (Budapest: Gondolat Kiadó, 2013), 185–92.

34 Magyar Nemzeti Levéltár Országos Levéltára (=MNL OL) M-KS-288.f 47/812.

35 MNL OL M-KS-288.f.4/119-120. 1972. Session on November 14 and 15; Tibor Huszár, *Kádár János politikai életrajza 2.* (Budapest: Szabad Tér Kiadó–Kossuth Kiadó, 2003), 246–56.

36 Lajos Fehér was a member of the Political Committee and the Central Committee as of 1957. He played a prominent role in the formation of the contemporary agrarian policy as the head of the Agricultural Division of the CC and then as president of the Cooperatives Policy Panel between 1966 and 1974. He was the Deputy Prime Minister between 1962 and 1974. Fehér was a member of the lobby within the government, which supported the New Economical Mechanism and the market based reforms.

37 Rezső Nyers was finance minister between 1960 and 1962. He was an alternate member of the Political Committee between 1962 and 1966 and then a full member until 1974. Nyers was the secretary of economic policy in the Central Committee as of 1962. He was actively involved in developing and implementing the “New Economic Mechanism.” He became the president of the Consultative Committee of Economic Control within the government. He was marginalized along with other supporters of reforms, including György Aczél, Lajos Fehér, and Jenő Fock. He resigned as the secretary of the CC and then was removed from the Political Committee of the Hungarian Socialist Worker's Party in 1975.

38 Huszár, *Kádár János*, 246–56.

39 A lot of legal proceedings had been launched against the agrarian lobby's local representatives, mostly enterprising leaders of collective farms, who were open to novelty, based on economic indictments. Zsuzsanna Varga's research showed that more than one thousand legal proceedings were initiated against leaders of collective farms in the first half of the 1970s. This represented 10-15 percent of management.

committed a lot of acts that were regarded as “irregularities” by the anti-reform faction, and the opponents of the reform tried to annihilate them as the “seeds of capitalism.” Numerous inquiries were initiated against the new model farms, and they focused with particularly rigorous scrutiny on their relationships with institutions in the West. Economic development played a vital role for Kádár against the conservative forces, which launched a persistent campaign to imperil his position in the eyes of Brezhnev. So in Kádár’s “game of compromise,” the companies that had played prominent roles in production innovation became more valuable assets, as did their economic “creative forces” and the important role of their production. The abovementioned events provided an example for the dependency of the farms on political power. The advantages they enjoyed did not last forever, and when the upper layer of the political leadership was transformed and emphasis shifted, everything within the supported or “tolerated” category suddenly was pilloried as seeds of capitalism as the conservative forces gained strength. As the prominent enterprise of the era, Bábolna was always in the limelight, sometimes as a socialist model farm, sometimes as a forward bastion of capitalism.⁴⁰

The sociological content of these attacks meant that the retrograde forces wanted to weaken the alliance of reform communists and technocracy by series of attacks against technocracy. The adoption of technocratic methods of systems of economic governance bestowed the political power with the ability to avoid the most obvious errors of economic policy. Thus, the political power could ward off the economic crisis for a while. It could provide gradually rising living standards, it could create a relative balance between the commodities and demand, and it could avoid the political earthquakes that are caused by economic disappointment. The system centers became necessities within Hungarian agriculture in the 1970s, and their leaders exerted a significant influence on political life. The prominent companies enjoyed monopolies in several areas, and their managers had the necessary technical and cultural capital to maintain control over the key factors of production, which was a powerful lobbying tool.

These legal proceedings exaggerated some established activities, which were not aligned with the concept of domineering conservative force. They were then pilloried. An example was made of them and their cases served as a means of intimidating others. Varga, *Az agrárlobbi tündöklése és bukása*, 193–208.

40 Schlett, *Sziget a szárazföldön*, 123–25.

Crisis and Path Dependence

Significant transformations were taking place in the global economy in the 1970s, and the conditions of global economy changed adversely in terms of agriculture. The development of Hungarian agriculture in the second half of the twentieth century faced a rapid rise of direct (fuel) and indirect (chemical fertilizer, pesticide, machine etc.) energy input.⁴¹ The proportion of the materials with industrial origins in the total material resources of agriculture was very small in the early 1960s, but by the middle of the 1980s it had risen to almost 60 percent.⁴²

While the conditions of development in the 1960s were characterized by abundance and an accumulation of factors of production at a relatively low price, the broadening international relations and their aftermath, the expanding markets, and the changes in the global economy in the 1970s and 1980s revealed the vulnerabilities of the agricultural production systems.⁴³ The boom in energy and fuel prices radically changed the price conditions of Hungarian foreign trade. Changes in prices on the world market appeared, if with some delay, in trade that was done in rubles because of a switch to a five-year crawling price basis.⁴⁴ So in 1975 the price level of import in this relation increased more than 25 percent, while that of energy sources doubled.⁴⁵ This significantly affected the cost claims of energy-intensive agricultural systems.

After 1973, global economic processes and the significant decline in Hungarian foreign trade made clear with tremendous force the extent to which the Hungarian economy depended on its involvement in the international division of labor and the benefits of this involvement.

The conditions of sales became more adverse, since the global market faced a crisis of overproduction in agriculture. The prices of food significantly dropped in the terms of export toward capitalist countries, and foodstuffs were relatively devalued. Agricultural and food products, which had attracted considerable

41 Zoltán Kaposi, "A magyarországi energiapolitika változásai a tervgazdasági rendszer időszakában," in 1956: *Fordulópont a gazdaságpolitikában*, ed. Katalin Botos (Szeged: SZTE Gazdaságtudományi Kar, 2007), 117–18.

42 Zsuzsanna Varga, *Modelltranszferek keletről és nyugatról: mezőgazdasági termelészövetkezetek Magyarországon 1949–1989* (Dissertation for the Hungarian Academy of Sciences, 2014), 16.

43 Zsuzsa Bekker, *Rendszerváltság. Alkalmazkodási folyamatok a kelet-európai országokban 1970–1990 között* (Budapest: Aula, 1995), 147.

44 Mária Barát, *A magyar gazdaság vargabettyje* (Budapest: Aula, 1994), 157.

45 Ferenc Vági, "Vállalatiság és gazdaságirányítás," *Gazdálkodás* 4 (1986): 32–33.

sums in convertible currencies, had lost a great deal of their strength, and their strategic role was questioned. Foreign trade with market economies gradually became an Achilles' heel of the Hungarian economy. Development was required to import goods, but in turn development called for export. However, trade with the West had nurtured an acceptance of Western measures (with regards to the market). The deficit of foreign trade reflected a continuous drop in effectiveness, which caused a dramatic increase in government debt.

While Hungary's import in the field of raw materials and energy sources was inflexible, the demand for Hungarian agricultural products had plummeted in terms of prices of export.⁴⁶

In the 1970s, economic and technological development showed signs of discontinuity in the capitalist countries. Hungarian agriculture had to adapt and change its formations or transform them comprehensively and qualitatively as a reaction to the crisis, but these responses were not implemented. The system of economic planning, which was introduced in 1968, had a basic fault from the outset: it did not create a real market. It did not develop a market that could have had an impact on the economy and thus economic effectiveness had never possessed the necessary selective power for development and then for the assignation and implementation of these developments. Although the reform promised a new price system that would offer some guidance regarding how to change the composition of production and define the limits of return in terms of the products' costs (in short, it would transfer the impulses of the market to the companies), none of these promises was kept. The guiding power of prices was not implemented, because the prices were adapted to levels and increase of costs according to the "needs of autarchic development."

Moreover, the economic governance tried to eliminate the effects of inflation and did not introduce the changing price ratios of the global economy into the domestic price system. It predominantly tried to prevent the spillover effects of inflation by using budgetary instruments. Thus, the importing companies could not feel the real price ratios and price levels, and this prompted them to use imports in a less rational way. The companies did not have much interest in introducing modern technologies: their production plans were adapted to the existing machines and any changes in the production system meant that they would not produce the required amount of products.

46 Katalin Botos, Mihály Patai, and István Szalkai, *Pénzügyek és nemzetközi gazdasági kapcsolataink* (Budapest: Közgazdasági és Jogi Könyvkiadó, 1980), 10.

The extreme energy dependent structure of the agriculture remained unchanged. The existing production objects and technological procedures, which made a solid base for industrial methods, could only operate at a high cost. Agricultural companies were created and consolidated for great developments and production goals, but they did not have to deal with cost sensitivity, so they did not develop the necessary skills, nor were they able to identify potential opportunities to reduce costs.

This all illustrates the fact that the market orientation of agricultural estates never became a living and responsive force. Since prices did not impose limits on cost recovery, they also did not impose any requirements in the terms of efficiency. In addition, the same was true of competitiveness. The producer prices of agricultural products were fully isolated from the selling prices of foreign markets. The Kádár regime paid close attention to ensure that the modest living standards that had been achieved were not affected by external shocks.

In the wake of changing prices on the global market, the role of agriculture was fatefully linked to the status of a country trapped in a debt crisis. Agricultural export was necessary in order to keep the relative capitalist balance of payments in spite of the radically reduced prices on the global market, because this export could not be replaced by other products and branches. The need for subsidies in the area of export was increased, but this meant only qualitative support at the same time and it preserved the existing structure, because it brought the economic assessment of the lowest quality and the best products closer together.⁴⁷ In the middle of the 1980s, more than half of the support provided for the food economy consisted of export subsidies.

By this time about 20 percent of the products of the food economy were exported, which was a higher proportion in relation to national production, and one third of the export went to the markets with convertible currencies. So the food economy produced an export surplus of 50–60 billion HUF, including its 30 billion export surplus in the area of convertible currencies, and contributed to maintaining the delicate stability of the Hungarian national economy.

Although a series of government and state party decisions emphasized that the agricultural development was based on a proven agrarian policy, the efficiency of investments became more and more unbeneficial with respect to increased agricultural production. Economic policy measures still did not contain

47 Gyula Varga, "Az agrártermelés növekedésének és strukturális átalakulásának változatai," *Gazdálkodás* 23, no. 4 (1989): 3.

any requirements for greater efficiency. The growing debt crisis prevented the implementation of the necessary steps for the transformation of structure, and only a few regulations, which it was assumed were compatible with the market, started the more favorable processes toward the future transformation of the structure. However, restrained imports overshadowed these measures, as did the constraint that forced the production of goods that could have been sold for convertible currencies, independently of the economical nature of production and its effects on structure. This was also true of agricultural products.⁴⁸ Because of the changing external conditions and the inadequate responses, agricultural growth and its roles in economic growth increasingly became a subject of debates.

Conclusions

Returning to the questions I raised in the beginning of this paper, the islands of innovation produced familiar agriculture products of a higher quality than the usual domestic ones. In addition, they managed to create domestic varieties and breeds in certain areas due to the achievements of Western agricultural revolution. For example, the closed system of industrial-like poultry production (and then maize growing) was a new kind of production procedure in Hungary at that time. The meat was considered a partly civil, partly security (strategic and military) product in the domain of foodstuffs. It could be traded for oil within the COMECON. The sale of agrarian products to the Soviet market for dollars was a relatively new phenomenon, and the imported Western breeding animals provided good quality livestock. The organizational system purposefully adapted capitalist pragmatism to the socialist setting. The selected companies had a significant role in the introduction of the innovations, and the origins of this prominent role lay in the unique possibilities and exemptions, such as the limited profile exemption and the independent right to export. The political leadership created opportunities for these farms, and they could generate significant income as foundations for innovation and system organizers.⁴⁹

48 Imre Fertő, Pál Juhász, and Kálmán Mohácsi, *Az agrárrendszer válsága és a kibontakozás lehetőségei* (Budapest: Pénzügykutató Rt. 1991), 14.

49 For example, Bábolna as the system center of the Corn Product System provided servicing and organizing activities (such as advising, maintaining, repairing, buying artificial fertilizers and seed-corns) for revenue.

As I have shown, these features created very special conditions: not every product can be a strategic product; not every manager can be a member of the Central Committee; not every company can oppose the bureaucratic governance, but only a few of them can get specific status. Thus, it is clear that innovation under socialism cannot be a rule, just an exception.

As I have shown, the key to the secret was precisely this island-like feature and the fact that the success stories did not become general models because they had to maintain their island-like nature in order to be successful. The ever growing islands had to integrate the cooperating and the non-cooperating units under their control, because the setting was unsuitable for cooperation.

A dual struggle was fought between integrating and non-integrating forces of the system between 1960 and 1990 in the areas of economy, structure, politics and society. Although the struggles of selected companies and model farms could be described as an almost heroic battle against dysfunction at micro and meso-levels, only the leading technocrats who had become part of the political power system were allowed to participate in this fighting and apply some elements of market policy. However, they had to accept the limits set by the dominant power for the benefits (monopolies, subsidies). Actually, these companies behaved like supporting pillars of the regime. Their real interests did not bring them closer to competition and the market, despite the introduction of some elements of market compatibles. Their interests actually led to less efficient over-allocation by keeping the (dysfunctional) monopoly rights and remaining caught between politics and companies.

While the energy crisis imposed a lot of changes and innovation on every area of production in the West, socialist modernization controlled by higher levels resulted in a specific path dependence. The system prevented the changes from being realized on company levels and it also made the “selected companies” oppose any kind of disadvantageous changes, even in the short term. Thus the system could only get rid of the minor dysfunctional features, while preserving its basic traits.

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