

Formal and informal networks of learning between East and West: the modernisation of the Hungarian agriculture in the 1960s, 1970s*

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It has often been argued in the literature dealing with the history of the Cold War that the „Iron Curtain” was a drastic disconnection of the economic, scientific and cultural relations that had previously existed between the Western and the Eastern part of Europe. Hence, the emphasis is laid on discontinuity and fragmentation. Nevertheless, socio-economic reality was far more complex and the perfect isolation of the Eastern block existed only for a short period. Making use of archival sources opened after the political transition in 1989/90, we are now able to give a complex picture of the true nature of East-West relations in the period following the Second World War.

My paper focuses on the case of the Hungarian socialist agriculture. This economic sector accomplished a unique achievement within the Eastern block. The special character of the “Hungarian Agricultural Miracle” is well indicated by the fact, that while in other socialist countries there had still been a shortage of foodstuffs, Hungarian agriculture in the 1970/80s had been able to satisfy the requirements of three different kinds of market: home market, the market of COMECON and the one of capitalist countries.

My interpretation of this development is that of a special 'learning process'. Pedagogics, philosophy, policy literature, psychology and sociology all have their own approach to the 'process of learning'. As for my own research, the most useful help came from policy literature, where several different theories of 'policy learning' have emerged since the 1970s.¹

In the first part of the study I shall analyse why the Stalinist model of collective agriculture failed in Hungary in the first half of the 1950s, as well as the conclusions the Hungarian party leadership drew from this failure after 1956. In the second part I am seeking to explore why and how the opening towards the West was launched in Hungarian agriculture.

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¹ These include notions of 'political-learning' developed by Hugh Hecló, 'policy-oriented learning' developed by Paul A. Sabatier, 'lesson-drawing' analyzed by Richard Rose, 'social learning' discussed by Peter A. Hall and 'government learning' identified by Lloyd S. Etheredge. There is no shortage of theorization, however there is a relative lack of empirical work. For a recent summary of different theories, see: Nils C. Bandelow's introduction in: *Politik als Lernprozess?* (eds., Matthias L. Maier, Frank Nullmeier, Tanja Pritzlaff) Opladen, Leske, Budrich 2003.; David P. Dolowitz, David Marsh: *Who Learns What from Whom: a Review of the Policy Transfer Literature*, *Political Studies*, Vol. 44, no. 2. 1996. 343–57.

What kind of political and professional discussions and debates preceded this process? What were the formal and informal channels of learning from the West? The third part discusses the issues of takeover, the dissemination and the improvement Western technology in Hungary. Technology is, after all, not limited to machines and artifacts but includes the skills, knowledge, and people that make them work. In the final part of my paper I shall attempt to summarize the impacts of this special learning process between East and West .

Considering that in the former one-party system important decisions were always made on the highest level, my archival research was focusing on the leading bodies of the Hungarian Socialist Workers' Party (HSWP). I have collected the documents not only from the Political Committee (Politbüro) and the Central Committee but also the ones from Economic Policy Committee and from the Ministry of Agriculture. Beside archival and press material, my research draws on evidence from interviews.

I. Failure of the Stalinist Model-Transfer

From the beginning of the late 1940s on, Eastern European countries like Hungary that had been part of the Soviet block saw local communist parties seize total power. The process of Sovietization accelerated.² The official communist ideology attempted to put it across the population as a process of modernisation. They promised to improve poorly developed agrarian or agrarian-industrial countries of the region to modern industrialized ones through the adoption of the Soviet model. What was really behind it was that the Cold War confrontation grew more strained. Countries within the Eastern block had also served as a kind of security zone for the Soviet Union, hence, those who showed any divergence from the Soviet model meant a security risk. Their attempt, in accordance with their great power politics and security and military interests, was to establish a block through Sovietization that was controllable. On the one hand, this block had to be independent from the capitalist West, thus, self-sufficient, on the other hand, it had to be based on a strong heavy and military industry.

The pressure of taking over the Soviet model led to clear roles with the Soviet Union and Stalin being the 'Master' and the countries of the region assuming the role of the

² For more on this period in English, see: Iván T. Berend: *Central and Eastern Europe 1944-1993: Detour from the periphery to the periphery*. Cambridge, Cambridge University Press, 1996.; Richard J. Crampton: *Eastern Europe in the Twentieth Century and After*. London, Routledge, 1997.; Mark Pittaway: *Eastern Europe 1939-2000*. London, Arnold, 2004.; Geoffrey Swain, Nigel Swain: *Eastern Europe since 1945*. 3rd ed. New York, Palgrave Macmillan, 2003.

‘student’. This learning process affected all areas of life, the political system as well as the organisation of the economy and the society itself.³

In this period, several channels were used to transfer the Soviet model to Hungary. The primary mediators were communists who had spent a long time in the Soviet Union as refugees between the two world wars. This way they had had the opportunity to acquire not only the ideology but the local political, social and economic system as well. Following the Second World War, it was them who assumed leading positions in the local communist parties.⁴

Of primal importance was the fact that the Soviet Union had sent a great number of advisors to local ministries of economy, the military, political police headquarters in order to directly keep watch over the transition. Parallel to this, a number of professional delegations paid visits to the Soviet Union. The Soviet Union had organized a scholarship system that had the most reliable university students coming from Eastern block countries earn a degree that would get them in leading positions following their return to their home countries. Further contributors to the spreading of the Soviet ideology were the official press being under direct political guidance as well as the educational system brought under state control.

There were certain differences in the timing and the methods applied by the different countries, but the supremacy of the Soviet model had remained indisputable until Stalin’s death.⁵ This had been the case with Hungary, too, where the transition to one-party system became official in 1949.

All power was concentrated in the hands of the only remaining party, the Hungarian Workers’ Party (following the merger between the Communist and Social Democratic parties), which controlled and directed the work of the National Assembly, the Council of Ministers (government), and the local public administration. In this dual structure the task of the state organisations was to deal with everyday affairs, while that of the party organisations was to control them and define their overall policy.

³ The consequences of not showing full adherence to the Soviet model showed early. It is well known, Yugoslavia was first severely criticised and later, due to pressure from the Soviet Union, expelled from the Cominform in 1948. Later, on Moscow’s initiative, a series of show trials was launched throughout the region in order to remove communist leaders who had taken local interests and specialities into consideration when adopting the Soviet model.

⁴ In Hungary the most important persons of the group ‘Muscovites’ were: Mátyás Rákosi, Ern_ Ger_, Mihály Farkas and József Révai.

⁵ Considering the issue of the existence of the Soviet model, my interpretation is the following: until Stalin’s death the Soviet model was a Stalinist model. However, after 1953 this model changed, it became a ‘moving target’, a changing set of features, due to the Krushchev’s reforms.

Following the Soviet model was compulsory not only in terms of the establishment of the administrative structure but also with respect to economic policy. The expansion of heavy and military industry took absolute priority. The resources to cover the expenses had been created through limitations of consumption of population, the negligence of infrastructural development, and, through curtailments of income of agricultural origin. The latter was carried out through the price system, taxation and the compulsory deliveries of agricultural produce.

This typically war-time economic policy determined the management of the economy. In industry, nationalisation made it possible to eliminate goods, financial and market relations, and to convert to a centrally controlled system of production and distribution in which the quality and quantity of production by the now state-owned companies were prescribed by plan directives. Thus the planned economy came into being.

The situation was somewhat different in agriculture, where private property continued to play a decisive role. The intention was to change this situation by the “Socialist reorganisation of agriculture”, that is, by collectivisation. On 3 March 1949, the Political Committee (PC) of the Hungarian Workers’ Party (HWP) passed a resolution stating that, in the course of the first five-year plan (1950–1954), the transition was to be accomplished from small peasant farming to large-scale farming.⁶

As things turned out, a major conflict would emerge between a socialist state, trying to push through collectivization and private farmers committed to preserving their property rights. The reason this conflict proved to be particularly sharp in Hungary, a country of large estates in the interwar period, was that the land reform of 1945 had brought a radical change to the structure of landed property. As large and middle-sized estates were redistributed, the number of small-holders grew significantly.⁷ It is not therefore surprising that only a small group of landless peasants and dwarf holders were attracted to collective farming in the early 1950s. The great mass of the newly created class of land-owning peasants had no intention whatsoever of giving up their land.

⁶ Magyar Országos Levéltár [Hungarian National Archive, hereafter MOL] M-KS 276. f. 53. cs. 22. _e. Jegyz. könyv a Politikai Bizottság (PB) 1949. március 3-i ülésér_1. [Minutes of the PC of HWP] March 3, 1949. Agenda 2. Javaslat a mez_gazdaság öt éves tervére. [Proposition on the agricultural part of the first five-year plan.]

⁷ While prior to land reform (1941) almost 46 percent of the agricultural population were agrarian proletariats and 47 percent small scale farmers, following land reform this proportion changed to 17 and 80 percent respectively. The consequences of land distribution also had a significant effect on the entire social structure. The proportion of small scale farmers within society reached 43 percent in 1945. See, Sándor Szakács: From Land Reform to Collectivization (1945-1956). in: *Hungarian Agrarian Society from the Emancipation of Serfs (1848) to the Re-privatization of Land (1998)*, (ed. Peter Gunst) New York, Columbia University Press, 1998. 257-298.

Everything the landed peasants had heard about the structure and the functioning of the co-operatives (collective farms) following the Soviet model assured them, that they had swapped bad for worse. By giving up their private farming they had lost their means of subsistence, and, within the new conditions of cooperative farming their income, their mere existence became uncertain, not to mention the new, subordinate position they had to face.

For this reason a significant number of them preferred to accept the role of overburdened individual farmer than join a co-operative. The authorities became convinced, that peasants would only join collective farms if they became entirely impoverished. While it was predominantly the burdens on 'kulak' farms that increased in 1951, the burdens imposed on all peasant farms rose dramatically from 1951–52 on.⁸

The subjugation of village residents to arbitrary and coercive measures did not result in open resistance, but its negative consequences grew by leaps and bounds. Hundreds of thousands abandoned agricultural work, more and more land went uncultivated, agricultural output declined – as did the productivity of the land. Thus while there was a catastrophic decline in private peasant farming, the newly established and continuously expanding co-operative farm sector was incapable of compensating for the shortfall in production.⁹ By the turn of 1952–1953 the situation in the agrarian sector had become threatening in its consequences for the whole of Hungarian society.

The above mentioned phenomena had already shown the failure of the Soviet model, however, it became absolutely obvious through 1953. Following Stalin's death, Soviet political leaders proposed corrective measures to the countries of the Eastern block in order to ease the accumulated tension. In Hungary, this change was carried out by the government led by Imre Nagy. As a part of the „New Course”, several measures were taken to help individual peasants and allow members to quit agricultural cooperatives.¹⁰

The easier period did not last. In early 1955, the official policy coming from Moscow saw another turn and marked a return to the policy prior to 1953. Developing heavy industry became priority once again at the expense of living standards and the agrarian sector. The

⁸ MOL M-KS 276. f. 53. cs. 83. _ . e. Jegyz_könyv a PB 1951. szeptember 20-i ülésér_1. [Minutes of the PC of HWP] 20 September 1951. Agenda 1. A Mez_gazdasági és Szövetkezeteki Osztály javaslata a termel_szövetkezeteki gazdaságok meger_sítésére [Proposition of the Agricultural and Co-operative Department on the strengthening of collective farms].

⁹ Iván Pet_, Sándor Szakács: *A hazai gazdaság négy évtizedének története 1945-1985. I. (Az újjáépítés és a tervutasításos irányítás id_szaka 1945-1968.* [The History of Four Decades of Domestic Economy, 1945-1985. vol. 1, The Period of Rebuilding and Command Economic Planning, 1945-1968] Budapest, KJK, 1985. 210-217.

¹⁰ In the second half of 1953, of 5,224 collective farms 688 were dissolved, 255 in 1954. The 376,000 membership dropped by 126,000 and 20,000 in 1954. At the end of June 1953, they had 1,620,000 hectares. By the end of the year, this dropped to 477,000. Ibid. 251-257.

withdrawal of corrective measures in Hungary caused a political crisis, which, together with the strong social unrest and disappointment, ended in the revolution in 1956.

As is generally known, the revolution in 1956 is an important turning point in Hungary's political history.¹¹ It is, however, by no means part of the common knowledge that, following the revolution, the agrarian policy had seen changes and corrections unprecedented within the socialist block.¹² The Kádár-regime, rising to power with Soviet military aid, had been compelled to take these measures. They wanted to make up for a lacking political legitimation by increasing the living standards. As János Kádár, the chief secretary of the Central Committee of the Hungarian Socialist Workers' Party (HSWP), pointed out at the session of the Provisional Central Committee held on 2 December 1956: „Our policy in economic questions, and especially, in questions of redistribution is that the primary aspect should be the gradual rise in living standards.”¹³

Fulfilling the aims living-standard policy at that time (and for a long time to come) depended mainly on food supplies. In the first half of the 50s, due to a violent introduction of the Stalinist kolkhoz model being totally inappropriate for Hungarian conditions, agrarian produce had dropped back dramatically. The primary goal of the correction launched after 1956 was, thus, to increase agrarian produce.

To settle things between the party-state and the agrarian population, the severe tensions generated by the former agrarian policy had first to be eased. Of the new measures the abolition of compulsory deliveries was the most significant as it occasioned a sharp break with state socialist strategy.¹⁴ Compulsory deliveries had been considered an integral part of the socialist system and Hungary was the first socialist country to take the step of abandoning them.¹⁵ Instead of using economic compulsion, the state was now establishing commercial relations with the agricultural producers, peasants and co-operatives, and trying to give them market incentives to produce more food. The significance of all this was that market forces

¹¹ For an introduction to the Hungarian history of the post-1956 era in English see: Iván T. Berend – György Ránki: *The Hungarian Economy in the Twentieth Century*. Sydney, London, 1985; Lajos Izsák: *A Political History of Hungary 1944-1990*. Budapest, Eötvös University Press, 2002; Ignác Romsics: *Hungary in the Twentieth Century*. Budapest, Corvina – Osiris, 1999; Nigel Swain: *Hungary. The Rise and Fall of Feasible Socialism*. London – New York, Verso, 1992; Rudolf L. T_kés: *Hungary's Negotiated Revolution. Economic Reform, Social Change and Political Succession, 1957-1990*. Cambridge, Cambridge University Press, 1996.

¹² See more on this: Zsuzsanna Varga: The Impact of 1956 on the Relationship between the Kádár Regime and the peasantry, 1956-66. *Hungarian Studies Review*, Vol. XXXIV, Nos. 1-2. 2007. 155-176.

¹³ A Magyar Szocialista Munkáspárt ideiglenes vezet_ testületeinek jegyz_könyvei I. 1956. november 11. – 1957. január 14. [Minutes of the Provisional Leadership Bodies of the HSWP, vol. I. November 11, 1956. – January 14, 1957.] Budapest, InterArt, 1993. 151.

¹⁴ *Törvények és rendeletek hivatalos gy_jteménye, 1956* [Official Collection of Laws and Ordinances, 1956], Budapest, KJK, 1957. 62, 68-69, 263-265.

¹⁵ Karl-Eugen Wädekin: *Agrarian Policies in Communist Europe: a Critical Introduction* The Hague, London, M. Nijhoff, 1982. 65.

were being applied, albeit to a limited extent, in one of the main sectors of the post-1956 Hungarian economy.¹⁶

The relationship between the regime and the peasantry came under stress again when collectivization, as result of pressure from Moscow, re-emerged as a policy at the end of 1958.¹⁷ By February 1961 the HSWP finished the collectivisation. The statistical data reflects that turnaround. In 1961 there were 271 state farms, approximately 4,200 co-operatives and almost 165,000 individual farms registered.¹⁸ Formally, therefore, the collectivisation was a success but grave problems arose in the process. For the next five years (1960–65) agricultural production hardly reached the average for 1958–59.¹⁹ There were supply difficulties for several years.

In order to promote a growth in agricultural produce – lacking the amount of money and the level of mechanization required – the HSWP needed the diligence and ambition of the Hungarian farmers badly, not to mention the buildings and the instruments of production used temporarily in the household plots.

The party leadership, alas, had to act under pressure, which had moved them towards making further concessions. Considering the consequences of 1956 as well as the policy of living standards undertaken, they had to come to an agreement with farmers. In these “negotiations”, collective farmers managed to fight out their right. They had been allowed to keep more breeding animals in their household plots than earlier, to return to share-cropping, to be paid premiums in kind and so on. These rational demands made by the membership, however, were largely inconsistent with the Stalinist idea of kolkhoz.

I have to emphasize, however, that a cautious and gradual deviation from the Stalinist model, which led to the essential modification of this model, was never openly admitted by the Hungarian leadership. Kádár and his associates did not want to get into an ideological dispute with the leadership of the Soviet Communist Party; they satisfied themselves with selective appropriations of the changing Soviet model.

¹⁶ MOL M-KS-288. f. 28/1957/13. _ . e. Az Élelmezésügyi Minisztérium el_terjesztése az MSZMP Politikai Bizottságához az új felvásárlási rendszer eredményeir_1 és tapasztalatairól [Ministry of Food submission to the Political Committee of the HSWP on the achievements and experiences with the new central purchasing system], 19 November, 1957.

¹⁷ The collectivization in the first half of 1950s had failed twice in Hungary. See more on the history of collectivization campaigns, Zsuzsanna Varga: Agrarian development from 1945 to the present day. in: *History of Hungarian Agriculture and Rural Life, 1848-2004*. (ed. János Estók.) Budapest, Magyar Mez_gazdasági Múzeum – Argumentum, 2004. 221-252.

¹⁸ *Mez_gazdaságunk a szocialista átszervezés idején, 1958-1962* [Our Agriculture in the Time of Socialist Reorganization, 1958-1962] Budapest, KSH, 1963. 25-27.

¹⁹ *Ibid.* 68-79.

II. Opening towards the West: the First Steps

After the completion of collectivisation between 1959 and 1961, it became obvious that it would take years to consolidate collective farms. State farms played an important role in this situation.²⁰ The party leadership intended the state-owned farms to play a significant part in boosting agricultural produce. Their primary task was the application of the new methods of production and their spreading to cooperatives. Lajos Fehér, secretary of the Central Committee of the HSWP, responsible for agricultural matters, made the governmental intention towards cooperatives clear at a session of the Central Committee held on 28 March 1962: „Socialist state farms shall, like locomotives, pull the entire agriculture forward.”²¹

In the beginning of the 60s, state farms were reserved primarily for the production of cheap animal products. Experience from the West had shown that, after the Second World War, the production of poultry and eggs developed at a surprisingly quick rate. This was due to the first-time-ever application of an industrial-style production system.

The system of large-scale production of poultry and eggs involved all biological, technical and organisational aspects from research to actual production. This is the so-called closed production system meaning the practical synthesis of biological and technical science. It aims at a quick, significant and economical increase in the specific output of cultivation and live stock farming. This required a close coordination and continuous updating of all factors of production. This development had enabled the agricultural sector to produce a massive amount of meat from one year to the other.

The Hungarian party leadership, that had previously undertaken the policy of living standards and was just facing deficiencies in the performance of a newly collectivised agriculture, needed this development very badly.

In May 1960, a delegation of three experts was sent to the Federal Republic of Germany. They visited the Lohmann at Cuxhaven, leading company in the production and distribution of poultry and eggs not only in Germany but also in Western Europe. The members of the delegation were deeply affected by the visit. As one of them told me in an

²⁰ After the land reform in 1945, the task of state farms was similar to that of former state model farms: to supply small farms with improved sowing seeds and pure-bred breeding animals, and to lead the way in the application of modern production methods. Communist propaganda presented state farms as the embodiment of the highest form of ownership. Thus, in the course of the collectivisation campaigns, they were given the task of acting as models of exemplary large-scale farming for the emerging co-operatives. Accordingly, they enjoyed a disproportionately high percentage of agricultural investments. However, their production levels in the 1950s remained very low for years. Among other things, this was due to the fact that, because of the massive surrendering of private lands between 1949 and 1953, their area increased tenfold, although this increase was not accompanied by a similar rise in machine and tool stocks.

²¹ MOL M-KS-288. f. 4/47-48. _e. Jegyz_könyv a Központi Bizottság 1962. március 28-30-i ülésér_1. [Minutes of the Central Committee of HSWP] 28-30 March, 1962.

interview, it was not only the company's capacity to produce especially productive hybrids that impressed them so much but the closed system that enabled maximum results. In this closed production system all factors affecting productivity, that is, the amount of light, air, water supply, hygienic conditions are automatically controlled. The members of the delegations had even been authorized to make inquiries about the Western German company selling the system to Hungary.²²

For those who know the relationship between Eastern and Western-block countries at the beginning of the 60s, it probably comes quite as a surprise that Hungarian professionals had been allowed to get in a direct contact with the Federal Republic of Germany. This would have certainly been unthinkable without the knowledge and permission of the Soviet Union. The reason they accepted this contact can be explained with the exceptional position Hungary had taken after 1956.²³ Following the suppression of the revolution, the leadership in Moscow had granted Hungary a wider scope for action so as to prove the superiority and constancy of the socialist system. „Khrushchev had the intention to make Hungary a kind of experimental laboratory for an attempt of a reform that would make communism more flexible to external conditions.”²⁴ The only thing the Soviet Union insisted on was internal stability. Otherwise, in tactical questions it showed remarkable flexibility. This was one decisive factor of the special Hungarian agrarian development.

The poultry project was launched due to a political decision made on the highest level.²⁵ A state farm, called Bábolna had been chosen as the location of this experimental project. At first it seemed quite like an abortive effort to convert it exactly for an old traditional stud farm in state ownership.²⁶

The state farm was granted a remarkable capital to start with as well as relative freedom in international relations.²⁷ Finally, the authorities provided 50 million forints for the

²² The author's interview with János Keser_ (former deputy leader of the Agricultural Department of the HSWP). Budapest, 12 May 2007.

²³ János M. Rainer: *The Sixties in Hungary — some historical and political approaches*. in: *Muddling Through in the Long 1960s. Ideas and Everyday Life in High Politics and Lower Classes of Communist Hungary*. (ed. György Péteri) Trondheim, Norwegian University of Science and Technology, 2005. 2-26.

²⁴ Péter Kende: *A Párizsi toronyból. Válogatott politikai írások, 1957-1989*. [From the Parisian Tower. Selected Political Essays, 1957-1989.] Budapest, Cserépfalvi, 1991. 80.

²⁵ MOL M-KS-288.f. 5/200. _e. Jegyz_könyv a Politikai Bizottság 1960. szeptember 14-i ülésér_l. [Minutes of the Political Committee of HSWP] 14 September 1960.

²⁶ Bábolna was established in 1789 by the Austro-Hungarian Emperor Joseph II, as a state operated stud farm. Later it was operating as a model and promoter of efficient horse breeding and large-scale farming. Since Bábolna was already state-run, the collectivization drive did not uproot it. In the socialist period it specialized mainly in horse-breeding but the mechanization of agriculture and declining markets abroad for thoroughbreds had turned it into a loss-making operation by the late 1950s.

²⁷ The author's interview with Pál Romány (former head of Ministry of Agriculture). Budapest, 6 September 2007.

three-year poultry project starting in 1960.²⁸ This remarkably generous amount was only one sign that the project was supported by the highest levels of political decision-making. As a further step, Bábolna was allowed to import the required technology from western countries. This had been one of the most significant advantages, since Hungary, just like other socialist countries, had always been ill provided with convertible foreign currency. It had been, therefore, considered a true privilege to buy western technology.

Bábolna signed a contract with the Lohmann company from West Germany. The Hungarian state farm could buy breeding animals and entire poultry stables. Hungarian professionals (architects, machine operators, veterinarians, chemists, farmers, specialists of foraging) were also trained at the farms of the German company.

Even with the political decision made, the translation into practice involved numerous difficulties. These problems were due to the fact that in these times it was an extremely difficult and consequently very lengthy process to import capital goods from a western country into a socialist one. Such an import was a violation of foreign trade monopoly, financial and foreign exchange restrictions. Since they had been rather pressed for time and determined to be successful, certain regulations were eluded. A typical example would be the way Bábolna acquired the first complex Lohmann-system stable. The Ministry of Agriculture had invited the company to the National Agricultural Exhibiton and then made an agreement that they leave the entire stable with all equipments in Hungary as an exhibit. I mention this example to show you the kind of offences that companies had been, even later, compelled to commit in order to get round the bureaucracy and the difficult regulations of planned economy. As long as a project had been backed by the highest ranks of political decision-making, such conflicts on a medial and local level had always been settled from above.²⁹

The three-year poultry project was successfully accomplished.³⁰ This was an absolutely necessary success for the Kádár-regime, since by 1963/1964, the performance of Hungarian agriculture was far behind the expectations. It is therefore little wonder that when

²⁸ MOL M-KS-288.f. 28/1961/7. _e. A Mez_gazdasági Osztály el_terjesztése a második ötéves terv mez_gazdasági beruházásairól. [Submission of the Agricultural Department on the investment plan of the second five-year plan]

²⁹ First, Burgert's supporters in the Political Committee of the HSWP (e.g. Lajos Fehér) played a significant part in settling these conflicts. Later, Burgert himself became member of the political leadership. As a first step, on the ninth congress of the HSWP held on the 3rd December 1966, he was elected member of the Central Committee of the HSWP.

³⁰ In 1963, the poultry-farming sector produced a profit of 18 175 million forints. *Tények és adatok, 1945-1989. I.* [Facts and Data, 1945-1989] Bábolna, 1989. 14.

N.S. Khrushchev paid a visit to Hungary in spring 1964, the first place they took him was Bábolna.³¹

The Bábolna State Farm started to spread its large-scale production system of poultry and eggs in other farms of less solid capital, too. As a firm responsible for production, it offered its own modern technology and exercised tight control over it in the associated farms. Partner farms were provided not only with chicks but also with the tools, equipment and materials necessary for production. Continuous consultation was also made available, and producers were incorporated in the marketing chain. This form of cooperation spread quite rapidly and soon made Bábolna known throughout the country.

The following data indicate this process very clearly. The number of partner farms increased fivefold in the period between 1963 and 1968 from 62 to 289. At the same time, the outlaid poultry stock increased from 1.2 million to 28 million.³²

The reason I have discussed the appropriation of large-scale poultry-farming in Hungary so much in detail is to show you the typical problems arising even in cases when the support from the highest ranks of the political leadership had been granted. This successful cooperation, we may add, was not the beginning of a linear and steady development. It took a number of changes in the internal as well as the external conditions until learning from the west could be more generally accepted.

First, we must remember that, following the repression of the revolution in 1956, Hungary, or, to be more precise, the Kádár-government, had become internationally isolated for years. In attempts to ease the tension, the importance of informal channels grew beside the formal ones. I shall mention two of these that contributed to the establishment of relations to the Western partners while being based on Hungarian traditions. The first one was hunting. The potential of hunting-diplomacy had been recognized by the Kádár-government quite early. Hungary's stock of game had been famous throughout the world but the former hunting relations came to an end in the 1950s. The Hungarian government had the intention to change that. As a sign of the warm reception from the west, an exhibition of trophies from Hungary („Ungarn-Jäger"/ Hunters from Hungary) was held in Cologne, West Germany each year from 1957 on.³³ As part of this trend, in 1966, Hungary became a member of the International Council for Game and Wildlife Conservation (CIC).

³¹ *Magyar Mez_gazdaság* [Hungarian Agriculture], 1964/15. 1.

³² *Tények és adatok, 1945-1989. I.* [Facts and Data, 1945-1989] Bábolna, 1989. 24.

³³ The author's interview with Sándor Tóth (former head of the Hunting Department of the Ministry of Agriculture). Budapest, 20 June 2009.

The other opportunity to improve the image of our country was in the diplomacy of equestrian sports. Equestrian sports and horse-breeding had had a long and successful history in Hungary with an extensive international network as a result. This was what the government tried to revive after 1956. In the beginning, they brought spectacular horse-shows abroad.³⁴ They had been so successful that they regularly received invitations to perform in other Western European countries, too. Later it was first of all equestrian sports and the sale of racehorses that contributed to the expansion of our relations to the West.³⁵

The informal channels of establishing relations which I have just indicated through some examples, persisted, but official diplomacy eventually recaptured its original position. This process accelerated after the decision of the UN in 1962 to – as a result of top secret Hungarian-American talks – take the Hungarian question off the agenda.

As for the internal conditions, we must remember that the political and economic elite, accustomed to the cold war atmosphere of the 1950s, needed time to change their attitudes. The research institutes played an important role in having the necessity of the opening towards the west accepted. The Agricultural Research Institute of the Hungarian Academy of Sciences made intense inquiries towards the socialist as well as the capitalist countries in the late 1950s. Researchers from the West were invited to Hungary and the Hungarian colleagues kept track of the current literature and press releases concerning contemporary agrarian development in the capitalist countries. The institute regularly informed the Agricultural Department functioning beside the Central Committee of the HSWP of these developments. This meant that the results of latest scientific research found their way to the level of decision elaboration.

Furthermore, the institute made efforts to inform the general public on these matters. The institute had its own scientific review with articles discussing the agrarian development of Western European and American countries. The following books served the purpose of informing the general public. “The Agriculture of the United States of America” was published in Hungarian in 1959.³⁶ In the preface, Ferenc Erdei, director of the Agricultural Research Institute says: „This book by George S. Wheeler fills in a tangible gap in Hungarian publishing and, more broadly speaking, in the general public. It helps dissipate the ignorance

³⁴ The author’s interview with dr. János Pál. Budapest, 3 October 2009.

³⁵ László Borhi: *Iratok a magyar-amerikai kapcsolatok történetéhez, 1957-1967. Dokumentumgyűjtemény.* [Documents from the history of Hungarian–US relations, 1957-1967. Document collection] Budapest, Ister, 2002.

³⁶ George S. Wheeler: *Az Amerikai Egyesült Államok mezőgazdasága.* [The Agriculture of the United States of America] Budapest, Kossuth, 1959.

or over-simplified and biased views that had been predominant in these issues”.³⁷ 1963 saw the publishing of the book “In Farmsteads from Scandinavia to Italy”, whose authors presented the agricultural characteristics of Sweden, Denmark, the Netherlands, England, France, Western Germany, Austria, Switzerland and Italy.³⁸ This book was translated and published in several other socialist countries, too. One year later, another volume was published on French agriculture.³⁹

Altering the attitudes and thinking patterns of the members the party and state administration proved a much more difficult task. Significant progress could only be achieved in the second half of the 60s, during the preparation of the economic reform. The courses organized by the Department for Agitation and Propaganda of the HSWP not only offered basic knowledge on former taboos like market economy but also changed the general image of the Western world. The enemy-image established in the 1950s was replaced by one of a professional and business partner. This change can be followed closely in the contemporary media.

III. Knowledge networks across the Iron Curtain after 1968

The following phase of the development of East-West technology transfer is connected to the New Economic Mechanism (1968) which was the most radical and theoretically most innovative reform in the region – not mentioning the one in Yugoslavia.⁴⁰ The goal of the reform was to alleviate the problems of the planned economy, and to increase the efficiency of the economy. It was intended to achieve this partly by reducing the role of central planning, and partly by increasing companies’ independence. Although one- and five-year plans continued to be made, they were not broken down to company level. There were no longer prescriptions as to what, and how much, companies should produce. Instead of compulsory, direct plan directives, indirect economic regulators (taxes, credits, non-repayable subsidies etc.) were used. Company independence increased in terms of both production and investments. Elements of market mechanisms (price, profit, tax, credits etc.) were thus

³⁷ Ibid. 5.

³⁸ *Mez_gazdasági üzemekben Skandináviától Itáliáig*. [In Farmsteads from Scandinavia to Italy] Budapest, Mez_gazdasági Kiadó, 1963.

³⁹ Komló László: *Ipari mez_gazdaság felé. Franciaországi útinapló*. [Towards an Industrialized Agriculture. Travel Report from France.] Budapest, KJK, 1964.

⁴⁰ For more detailed information on the New Economic Mechanism, see: Iván T. Berend: *The Hungarian Economic Reforms, 1953-1988*, New York, Columbia University Press, 1990; *Hungary: A Decade of Economic Reform*. (eds. Paul G. Hare, Hugo K. Radice and Nigel Swain) London, George Allen & Unwin, 1981; Zsuzsanna Varga: Agriculture and the New Economic Mechanism. in: *Hungarologische Beiträge* 14. (ed. Anssi Halmesvirta) Kopi-Jyvä, Jyväskylä, 2002. 201-218.

implemented in the planned economy system. These were the main features that distinguished the Hungarian economic reform from the ones of other socialist countries in the 1960s.⁴¹

One big objective of the New Economic Mechanism was to open the economy towards the capitalist world. Hungary's policymakers were well aware of their economy's critical dependence on the East for energy, raw materials, and markets, and on the West for technology and many basic goods and intermediate products. Continued economic growth was crucially dependent on Western imports. The Economic Policy Committee was the top economic board of the HSWP that had been working beside the Central Committee. This committee drew up the new guideline in 1966 as follows: „We intend to expand our economic relations with the capitalist countries beside the socialist ones bilaterally as well as in the framework of international organisations.”⁴²

Entry into the International Monetary Fund and the World Bank was to have marked a stage along the way. Representatives of the Hungarian government initiated this during 1967, but a step of this magnitude necessarily involved consultation with the Soviet leaders, whose strong objections to membership of the IMF as a ‘seemingly a UN institution, but in fact under American influence,’ effectively ended the attempt.⁴³

There is an interesting parallel in Hungary's 1967 attempt to join the UN Food and Agriculture Organization (FAO). Again there were misgivings in the Soviet Union, which was not a member, but Hungary joined in 1967. Hungary actually renewed its FAO-membership that had been active back in the period between 1945 and 1951 and that was suspended exactly due to the pressure coming from the Soviet Union during the times of cold war.

The advantages of our accession to the organisation concerning the „opening to the West” showed early. In the year 1968 for instance, members of Hungarian delegations took part in a total of 35 committee sessions, conferences and study trips. In the same year, some 10 FAO-delegations visited Hungary.⁴⁴ Our accession facilitated the efficient cooperation and the exchange of technical and scientific experience. This was actually defined as a main task

⁴¹ The reforming work in the region was much influenced by the misconception that the quality of central planning could be improved by mathematical methods and computerization. See more on this: *Zur Physiognomie sozialistischer Wirtschaftsreformen. Die Sowjetunion, Polen, die Tschechoslowakei, Ungarn, die DDR und Jugoslawien im Vergleich.* (ed. Christoph Boyer) Frankfurt/Main, Max-Planck-Institut für Europäische Rechtsgeschichte, 2007.

⁴² MOL M-KS-288.f. 15/163. _e. El_terjesztés a t_kés országokkal való gazdasági kapcsolatok irányelveire. [Submission on guidelines of the economic relations with the capitalist countries] 11 November 1966.

⁴³ Ignác Romsics, Economic reforms in the Kádár Era. *The New Hungarian Quarterly*, 187. (2007) 69-79.

⁴⁴ MOL XIX-K-9-e 133. d. A FAO MNB 1968. évi kiutazási és meghívási terve és költségvetése. [Visit and invitation plan and budget of the Hungarian National Committee of FAO in 1968.]

of the organisation by the European Regional Conference.⁴⁵ Politicians in Hungary, indeed, tried to make use of it: „the possibilities offered by the FAO have to be considered beneficial sources of technical and statistic information”.⁴⁶

Hungarian agriculture saw additional advantages of our accession to the FAO. The above mentioned events offered an opportunity to enter into official relations with agricultural experts of the capitalist countries since most Western European countries and the USA had been members of the FAO.

The renewed activity is clearly reflected in the documents of the Department of International Relations of the Ministry of Agriculture and Food. In the period between 1967 and 1975, under the supervision of minister Imre Dimény, delegations were sent to France, Denmark, the Netherlands, England, Finland, Sweden, Norway, Spain, Italy and even the US. Dimény himself had led delegations to Denmark, Spain, Finland, Norway and twice to the Netherlands. In the same period, agricultural delegations from Canada, the US, England, France, Denmark, Finland, Norway, Austria, Federal Republic of Germany, Spain and Italy paid visits to Hungary. The successive minister, Pál Romány continued Dimény's work in the second part of the 1970s leading delegations to Austria, the US, Norway, Finland, the Federal Republic of Germany and had another one visiting Canada. In the same period numerous delegations of politicians and agricultural experts from abroad visited Hungary from the Federal Republic of Germany, Denmark, Austria, Finland, the US, Canada and Australia.⁴⁷

Many other examples could be given to show the importance of agricultural diplomacy in offsetting the strongly Eastern orientation of the Hungarian economy. This is what the atmosphere was like at the time of the opening towards the US. Among the antecedents we have to mention the Ford Foundation that, from the year 1964 on, every year offered a few Hungarian economic experts and researchers the opportunity to spend an academic year or semester in the US or England.⁴⁸ The East European programs of the Ford Foundation facilitated a considerable mobility across the systemic divide (between capitalism and socialism) of various groups of academic and economic elites.

⁴⁵ MOL XIX-K-9-e 36. d. Jelentés a Magyar Forradalmi Munkás-Paraszt Kormány részére a FAO Európai Regionális Konferenciájának 6. ülészakáról. 1968. [Report on the 6th session of the FAO European Regional Conference made for the Hungarian Workers' and Peasants' Government, 1968.]

⁴⁶ MOL XIX-K-9-ae 24.d. Emlékeztet_ a FAO információs tevékenységér_l szerzett tapasztalatokról, 1968. [A reminder of the experience gathered on the informational activity of the FAO, 1968]

⁴⁷ See the chronology in my 'Agrarian development from 1945 to the present day' in *History of Hungarian Agriculture and Rural Life, 1848-2004*. (ed. János Estók) Budapest, Magyar Mez_gazdasági Múzeum, 2004. 271-294.

⁴⁸ My acknowledgements to György Péteri for the information on the fellows of the Ford Foundation.

The first high-ranking delegation visited the US between 15th September and 23rd October 1969. It was led by István Gergely, the deputy minister of agriculture. Even though this delegation had been invited by American agricultural companies and not the ministry (United States Department of Agriculture), the trip did become official with the USDA presenting the elaborate plan of the visit. Members of the delegation did meet the deputies of the Secretary of State as well as the minister of agriculture.⁴⁹

The main objective of the trip had been the examination of the scientific, technical and practical results of the last five years, as well as gathering information on the species of plants and animals to be bred, methods and tools of production that may be applicable under Hungarian circumstances.⁵⁰ Beside these goals, however, they paid special attention to offering information on Hungarian agriculture and the country in general.⁵¹

The companies visited had shown the members of the delegation numerous new species of corn, sugar beet, soy beans and vegetables as well as new technology and machinery. The members of the delegation, especially Róbert Burgert, manager of the Bábolna State Farm, paid special attention to the produce of corn. The produce of fodder was largely problematic in Hungary in this period. Finally, Burgert bought a John Deere-production line for the cultivation of 6000 hectares of maize.⁵²

This purchase had a symbolic importance. On the one hand, it is an indication that, by this time, the size of Hungarian state and collective farms had got near or even surpassed that of big American farms. On the other, it clearly shows the great opportunity offered by the system of currency credits that had been made possible to Hungarian companies through New Economic Mechanism.

The system of currency credits enabled companies to buy modern machinery and know-how from abroad. The credit was only to be returned later when it was covered mostly by the export of surplus product. This way Bábolna was able to modernise the production of maize, the main fodder for poultry, and therefore a key element of agriculture.

⁴⁹ MOL XIX-K-9-ab 34. d. Tájékoztató jelentés a Magyar Forradalmi Munkás-Paraszt Kormány részére a mezőgazdasági szakdelegáció tanulmányútjáról, 1969. [Guiding report on the study trip made by the agricultural delegation to the Hungarian Workers' and Peasants' Government, 1969.]

⁵⁰ MOL XIX-K-9-ab 34. d. Úti beszámoló Amerika mezőgazdaságáról. [Travel report on America's agriculture] It is worthy of another investigation through which channels the experience gathered during the American trip was introduced to Hungary. There had been two short films, two books and a number of newspaper articles. The members of the delegation held many lectures on the topic throughout the country.

⁵¹ MOL XIX-K-9-ab 34. d. Gergely István 1969-es útjához ismertetőanyagok Magyarországról, 1969. [Publicity material on Hungary made for István Gergely's trip in 1969.]

⁵² MOL XIX-K-9-ab 34. d. Tájékoztató jelentés a Magyar Forradalmi Munkás-Paraszt Kormány részére a mezőgazdasági szakdelegáció tanulmányútjáról, 1969. [Guiding report on the study trip made by the agricultural delegation to the Hungarian Workers' and Peasants' Government, 1969.]

„Babolna's most notable achievement can be traced to a 1969 cooperation agreement it entered into with Corn Production Systems (Chicago, USA), on the basis of which American technology and know-how and local management and inputs were synthesized into a large-scale crop management model. This is the so-called "technically operated production system", whose goal is to optimize yield, minimize costs, and maximize profits in specialized areas of production, such as corn, wheat, or livestock operations. In the case of corn, for example, the integrated system coordinates all areas of technology and know-how: genetics, plant protection, soil management (fertilizer, irrigation, drainage); specification of machinery and efficient handling of its maintenance and services; grain handling and storage; marketing; selection and training of all personnel; and financing and financial management.”⁵³

It is important to emphasize that Bábolna did not merely buy and adopt western technology but went on to develop it. That enabled the farm to market their own, specifically manufactured products. After its agreement with Lohmann expired in 1969 and Bábolna received independent foreign trading rights,⁵⁴ it entered into a cooperation with a German firm, TETRA Zucht GmbH, a conductor of basic genetic testing. This cooperation became so successful that Bábolna's specifically produced hybrids soon ranked among the best in the world.⁵⁵

By representing among top international quality in poultry farming, Bábolna had the opportunity to find access to markets envied by many other countries. The Middle East would probably be the best example for this. Bábolna had been exporting broiler hatching eggs, poultry and later even entire units to wealthy oil-producing Arabian countries like Saudi-Arabia and Iraq from 1968 on. Later, after assessing the local needs, they developed a large-scale sheep farming-system.⁵⁶

Bábolna also seized the opportunity provided by a decision of the Political Committee of HSWP in 1972. This enabled the formation of joint ventures with the participation of capitalist companies. The main task of these new cooperation forms was defined by the Political Committee of the HSWP as follows: „the rapid technical development of certain

⁵³ Paul Marer: *East-West Technology Transfer. Study on Hungary 1968-1984*. Paris, OECD. 1986. 159-160.

⁵⁴ From 1st January 1968 on, namely, that the farm was permitted to engage in foreign trade without the participation of state-owned trade companies. According to these advantages, the export-import rights of the company involved the following products: poultry (goose, duck, guinea-hen, etc.), stallions and racehorses. After a while the minister of foreign trade extended the rights to the export of the system of poultry farming as well.

⁵⁵ In 1973, it was the TETRA-SL hybrid (layer) that produced the best results in international tests. According to a comparative broiler study conducted the same year in the Federal Republic of Germany, TETRA-B hybrid (meat) also ranked first.

⁵⁶ *Tények és adatok, 1945-1989. I.* [Facts and Data, 1945-1989] Bábolna, 1989. 49-63.

branches of Hungarian production, the increase in their export capacity and economic efficiency.”⁵⁷

Bábolna established two joint ventures with western companies.⁵⁸ By means of its joint ventures with western companies, the Bábolna State Farm, on the one hand, received the very latest information on new scientific findings, and on the other, was continuously exposed to the judgements of the world market.

Beside Bábolna, other state farms and collective farms joined the east-west technological transfer as well. Babolna’s success in employing and disseminating a Corn Production System created imitators quickly. During 1971-1973 several alternative Plant Production Systems emerged, four in corn alone, each with significant product differentiation in terms of the technology or the financing arrangement offered. By the end of the 1970s, a total of 72 production systems were functioning in Hungary: including 21 with plant production, 31 with horticulture, 17 with livestock and 3 with a mixed profile. This figure grew to 94 during the 1980s.⁵⁹

These data indicate not only the dynamic pace but also a general characteristic of the development of Hungarian agriculture that had been the main reason for its success, too. The organisations officially assigned the task of modernisation were enterprises and not central authorities. Because those offering the technology were themselves agricultural producers, the dissemination proceeded horizontally, not vertically like in industry. As a consequence an entirely new form of large organisation, the voluntary association of producers, was created. Collective and state farms joined such a system to share some of the risks as well as profits. Such associations were organised without a central authority objecting or trying to control them.

This had been a marked departure from the official socialist economic order, nevertheless, practice later proved this divergence entirely correct. Forms of cooperation on the initiative of enterprises were later spread in food industry, too.

⁵⁷ MOL M-KS 288. f 5/574. _e. Jegyz_könyv a Politikai Bizottság 1972. február 8-i ülésér_l. El_terjesztés a magyar és külföldi vállalatok közös t_kével történ_vállalkozásainak gazdasági és politikai kérdéseir_l. [Minutes of the Political Committee of HSWP, 8 February 1972. Report on economic and political matters of joint ventures of Hungarian and foreign enterprises]

⁵⁸ Corn Production System (1975) was the outgrowth of an earlier technical cooperation agreement, subsequently expanded into a joint venture, between Corn Production System (US) and the Hungarian firms Intercooperation Co. Ltd. and Bábolna State Farm. BRC Lilly Ltd. (1981) was established between US pharmaceutical firm Eli Lilly and the Bábolna Agricultural Complex, Chinoin Pharmaceutical and K_bánya pharmaceutical firms for the production of veterinary pharmaceuticals and byproducts.

⁵⁹ *Tények és adatok, 1945-1989. I.* [Facts and Data, 1945-1989] Bábolna, 1989. 95.

The possibility of the cooperation in food industry showed a particularly dynamic development with the Federal Republic of Germany. Hungarian companies undertook the joint production of deep-frozen fruit and vegetables with the Langnese-Iglo Company, that of special dairy products with Danone and that of pudding and instant pudding products with Oetker.⁶⁰

The same had happened in the field of agricultural machinery production. Co-operations with American companies like between Rába and Steiger or the cooperation between Hungarian agricultural machine company Mez_géptröszt and John Deere, FMC, Hesston and Lundell had enriched our machine stock with high-powered tractors, harvesting engines, production lines, etc.⁶¹

IV. Conclusion

My research showed that the Hungarian agriculture was able to identify, import, absorb and disseminate rapidly and effectively a certain amount of the western technology it needed. By 1981, 96% of all large agricultural units (state farms, collective farms) were participating in some agricultural production system and 90% of the country's corn and 88% of its wheat crop were produced by system members.⁶² The rapid and widespread dissemination of these new production systems meant that practically all large farms in Hungary adopted modern agricultural machinery, and combined it with modern know-how.

The impressive technological performance of agriculture seems more striking if we compare to the weak performance of Hungary's industrial branches where the technology gap could not be significantly narrowed in the 1970-80s.⁶³

Several factors explain agriculture's success in technological renewal. First of all, we have to refer to the more consistent application of the principles of the New Economic Mechanism and to the emergence of a functioning market mechanism in the field of agriculture. The Ministry of Agriculture and Food granted relatively free hand to large agricultural units to import a certain amount of technology. An important prerequisite for the

⁶⁰ MOL XIX-K-9-e 802. d. A magyar – NSZK kapcsolatok alakulása az élelmiszeripari együttm_ködés terén. [Development of Hungarian and West German cooperation in food industry]

⁶¹ MOL XIX-K-9-e 609. d. Tájékoztató a magyar-amerikai mez_gazdasági és élelmiszeripari együttm_ködésekr_l, 1975. [Report on the Hungarian-American cooperations in agriculture and food industry, 1975.]

⁶² Pál Romány, The completion and partial dismantling of collective agriculture. in *Hungarian Agrarian Society from the Emancipation of Serfs (1848) to the Re-privatization of Land (1998)*, (ed. Peter Gunst) New York, Columbia University Press, 1998. 357-366.

⁶³ Paul Marer: *East-West Technology Transfer. Study on Hungary 1968-1984*. Paris, OECD. 1986. 220-225.

acceptance and adaptation of such systems was the emergence in large farms, as a result of medium- and high-level agrarian training reaching mass scale, of a highly-skilled and experienced labour force by the early 1970s. The structure and relationship between the production units were fundamentally different in agriculture and industry. Even though the average size of the state and collective farms was huge, there was no monopolistic concentration like in many industrial branches. The way, the Hungarian agriculture was organised and controlled made it possible for competition to emerge not only between buyers but also between the technology's suppliers.

If we try to measure the imported technology's contribution to the growth, the following statistical data could be taken into account.⁶⁴ Within crop farming, the greatest success was with cereals—chiefly wheat and maize. Yields which had been between 7 and 8 million tons in the previous decades rose to 11.4 tons in the first half of the 1970s. With respect to the successes achieved in crop farming it should also be borne in mind that, besides the transformation of the material and technical conditions of production, there were major changes in the biological foundations. During the 1970s, a complete change of wheat variety took place. In terms of maize, hybrid selection was changed on two occasions. As a result of all these factors, average wheat yields rose from 3.3 tons in the early 1970s to 4 tons by the end of the decade. In the same period, maize harvests rose from 4.1 tons to 4.8.

The dynamic increase in average yields of wheat and maize created the foundations for the rapid development of livestock keeping and meat production. Between 1970 and 1985, total meat production rose by 37 per cent, from 957,000 tons to 1,300,000 tons. Within this, beef production essentially stagnated, while the production of pork, chicken and mutton increased more rapidly. In the first half of the 1970s, an annual average of almost 1.9 billion litres of milk were produced, and ten years later the figure was almost 2.7 billion litres. In the same period, egg production increased from 3.5 billion to almost 4.4 billion, and raw wool production from 8,300 tons to 12,200. The results achieved in grain and meat production made it possible for Hungarian agrarian exports to triple between 1965 and 1975. This is of particular significance because, until the mid-1960s, the country had relied on imports of bread grains and meat.

The achievements of the domestic large-farming system in terms of cereal farming and meat production were significant even by international standards. Measured in terms of per capita grain production, Hungary ranked fifth in the world in 1985. With a figure of 1,391

⁶⁴ The source of the following statistical data: *Hungarian Agriculture 1851-2000. (CD-ROM)* Budapest, Hungarian Central Statistical Office, 2000.

kilograms per person, it followed such extensive—with the exception of Denmark—grain-producing countries as the United States, Canada and Australia. In terms of wheat production Hungary came second after Canada, and in terms of meat production it took fourth place after Denmark, Holland and Australia. In the mass-scale production of hens' eggs, Hungary came second to Holland.⁶⁵

The above listed data give us a detailed picture of how agricultural produce and, as a result, food industry was modernised through technology adopted from the west. A much more difficult question is the impact Hungary had on the countries whose technology it had not only adopted but also improved. This was exactly the question that had intrigued both Western Germany and the USA. The interpretation of the experience of Western German and American visits paid to Hungary certainly requires archival research abroad. The analysis of contemporary press releases, however, clearly shows that learning from the west can not be considered a one-way process.

A further topic worth exploring is what the countries of the so-called third world learnt from Hungary. In the course of my research on the national committee of the FAO I have regularly come across materials made by delegations that had spent a significant amount of time in Hungary to study not only farms but also the system of professional education and research. I have also learnt that a great number of Hungarian agricultural engineers were employed in the so-called developing countries in the 70s.

Another important question is how Hungary transmitted the technology adopted from the west to other COMECON-countries. The relation between Hungary and the Soviet Union would certainly be of the greatest interest. The relatively tolerant attitude of the Soviet Union towards reformist endeavours in Hungary served largely selfish ends. The advantages provided by Hungary's dynamically expanding western relations were, through certain transfer procedures, beneficial for the Soviet Union, too. By the 80s, Hungary had been praised on the highest Soviet forums as the model of socialist market economy. As a peculiar paradox of history, parallel to the growing backlog of the Soviet Union, in the final phase of the crisis, the formerly fixed roles switched. The Soviet Union, the great teacher, acknowledged that they had much to learn from Hungary's example.

⁶⁵ This data was published by the Central Statistics Office of Hungary (KSH) but it is based on calculations made by the Food and Agriculture Organisation of the United Nations (FAO). See: *A magyar mez gazdaság nemzetközi összehasonlításban*. [Hungarian agriculture in international comparison] (Budapest: KSH, 1987) pp. 25-28.