

Viktor Pál,
University of Tampere

Grantee Report for the Visegrad Scholarship Fund at the Open Society Archives, Budapest

Project Title: The Birth of Modern Water Pollution and Water Protection in East Central Europe (ECE), from the industrial beginnings until the end of the 1960s

It is still a strong-holding view that environmental protection was marginal in East Central Europe (ECE) during state-socialism. In the past decade it has been discovered by a handful of works, most notably by Zsuzsa Gille and Petr Pavlínek, that environmental protection was acknowledged by the ECE communist regimes.¹ However, the socialist system did not provide viable environmental protection solutions and eventually led to ecological depletion and local ecological catastrophes throughout ECE. After the collapse of communism visual and textual representations of the state of the environment in Eastern Europe were dominated- as Zsuzsa Gille writes about it in her acclaimed book "From the Cult of Waste to the Trash Heap of History" - by "smokestacks burning coal, dirt and toxic waste, and degraded nature." According to Zsuzsa Gille "Narrow policy analysis continued to dominate environmentally oriented social science even after 1989." Still, there is limited sophisticated analysis on the relationship between politics, society and the natural environment. Perhaps, one of the approaches to investigate the environmental history of the state-socialist regimes in East-Central Europe, is to build on the already well-known instances of economic history of the period. Ivan T. Berend and many others have investigated failed reform attempts in East-Central Europe. As Ivan Berend refers to this phenomena, "it was a detour from the periphery to the periphery."

During my stay at the Open Society Archives I have tried to integrate materials found in the Radio Free Europe holdings of the Archives into research previously have undertaken. During my one month stay between 22 February to 21 March I have researched the following fonds at the OSA:

- HU OSA 300-40-1.
- Boxes: 45-57, 263-4, 273-4, 281-9, 516-7, 531-6, 542, 630.

¹ From the Cult of Waste to the Trash Heap of History: The Politics of Waste in Socialist and Postsocialist Hungary, IUP, 2007 & Pavlínek and Pickles, Environmental Transitions: Transformation and Ecological Defense in Central and Eastern Europe, Routledge, 2000.

A large number of funds could not be researched in addition to the above mentioned, because of the shortness of the grantee period. Hopefully, these holdings will be able to be researched in a future occasion as a Visegrad grantee.

It is well-known today the First Five Year Plan (1950-54) in Hungary invested from its total 50.9 billion Forint budget, 18.3 billion (36%) to energy intensive and highly pollutive heavy industries. Light industry received a 3 billion Forints (5.9%). Agriculture itself - the main branch on national economy at the time - received 8 billion Forints (15.7%) of funding.

For Stalinist-style heavy industry energy was needed on a large scale. Much more electricity was on demand parallel with the immense growth of mining, heavy- and chemical industries and the construction of new cities where workers of these new factories would live. Electricity production was ordered to increase from the annual 2,200 million kWh to 4,270 million kWh. More than doubled in a five year period. Increased demand of electricity was to be supplied partly from domestic sources. Five new power plants would be built. The Kazincbarcika, Várpalota and Mohács power plants would run on low-calorie domestic coal and lignite. Coal was crucial not only for the energy production, but for transportation and domestic heating as well.

After Stalin's death, Hungarian political leaders were summoned in Moscow and between June 1953 and March 1955 economic planning was somewhat modified. The energy regime of the country however, could not be changed in such a short period of time. Coal and its steady supply remained crucial for Hungary. The quality and quantity of the Hungarian coal was inadequate. Low-calorie domestic brown coals were inferior to imported black coal from Poland and Czechoslovakia. Every autumn the journalistic accounts on coal mining reflected the stress in domestic coal supply. "For the Country's Coal Supply" says the title of an article in Szabad Nép in October 1954. In loose translation here is dramatic statement on the importance of coal: "We need to give our best to supply industry and the people with adequate amount of coal, so apartments would not remain cold during wintertime, and transportation and industry would not be disturbed." -said Sándor Czottner, Minister of Coal.

After the failure of Stalinist-style First Five Year Plan and the well-known events of October 1956, Hungarian economic policy was aimed to be reformed. Problems and mistakes of an earlier period were acknowledged, and the Three Year Plan Act in 1958 concentrated on the development of electromechanical-, telecommunications-, diesel-, and medical industries. After 1958, plans aimed to develop production potentials in regional centers instead of Budapest. For example in Baranya and Borsod county. Simultaneously, COMECON seemed to offer a viable alternative for

international cooperation in the Soviet bloc. This meant that in harmony with Hungary's economic partners the development of iron- and steel manufacturing and chemical industries dominated the investment policies of the 1960s. Energy needs were projected to soar in the first half of the 1960s, therefore Hungarian planners aimed to provide stability in energy supply. This was largely influenced by the coal supply issues of the 1950s. The quality, quantity and price level of domestic coal were all problematic features. The party leadership aimed to find reliable and affordable sources of energy. Simultaneously, the Soviet Union was capable to supply large amounts of crude oil and natural gas on a limited price level. This enabled Hungary to shift its major source of energy supply from coal to “cleaner” crude oil and natural gas.

In the journalistic representations of the energy regime change: “Takarékosság” - thriftiness and “hatásfok” efficiency or level of efficiency were given as reasoning.

Change in the energy regime had an impact on iron- and steel manufacturing, a traditional flagship industry and polluter of the state-socialist regime. The Lenin Metallurgical Plant in Miskolc, a heavy industrial giant employed about 15,000 workers at the time. LKM's coal combustion waste waters, blast furnace filter sediment waters, and rolling plant tallow waste waters were discharged without basically any mechanical, chemical and biological treatment to the Szinva Creek - a rather minor flow, which ran through the historic city centre of Miskolc to the horror of residents. Borsod Surgeon General depicted this flow in the early 1960s as an “open ditch” and a “public health hazard”. We know from the report of 1962 Northern Hungarian Water Directorate environmental audit that they found worrying conditions at the LKM. One of the main concerns was tar, which was floating in large pieces on the surface of Szinva Creek. Tar was discharged from the LKM's coal based energy generating facility, which could not have been replaced with cleaner technology without adequate state funds. In 1962 the LKM was obliged to pay over 3,5 million Hungarian Forint pollution fine.² Despite of the ambiguity in the system: a state agency fined a state owned plant, where the state itself did not carry out adequate modernization measures - abstraction fines facilitated production plants to be more engaged in various recycling and pollution prevention schemes as they sought to reduce their annual pollution fines levels. Coal conversion waste water represented a significant share of the water pollution fine at LKM. Therefore, after 1962 approximately 60 per cent of the total coal conversion waste water production was transported to the Chinoin factory to produce pyrochatechnin.³ At Chinoin, about 50 per cent of the phenol content was removed from these waste waters. All together, approximately 30 per cent of the total phenol pollution produced at LKM had been recycled. Coal-conversion water that could not be utilized at

2 Based on the long term CPI data of the Hungarian Central Statistical Office, this abstraction fine equaled approximately to 930,000 USD in 2010. http://portal.ksh.hu/pls/ksh/docs/hun/xstadat/xstadat_hosszu/h_qsf001.html

3 Pyrochatechnin is a white crystalline substance of the phenol series, $C_6H_4(OH)_2$ and calcium-dioxide CaO_2 .

Chinoin was pumped into two drying pits at the slag-heap of the LKM. In 1966, Chinoin abandoned the production of pyrochatechnin and coal-conversion waste water was sediment at LKM. Dried tar was then transported to the Coal Processing Plant in Dorog North-western Hungary by rail to extract its fuel content. In 1968 LKM introduced natural gas based energy generation as a result of a state funded modernization project and the problem of phenol production vanished. Other pollutants however, were present in waste waters of the LKM and other factories until they closed or underwent modernization in the early 1990s.

The chemical industry had limited importance during the First Five Year Plan. There were however, a few important investments. In Sajókazinc a new nitrogen-fertilizer factory was constructed, it was to supply Hungary's mechanized agriculture with fertilizer. The nitrogen factory reached its projected peak production in 1960 at 132,000 tons/ year. However already between 1959 and 1963 large scale enlargement projects were carried out, which were to double the capacity of the factory. The switch in the energy regime from coal to crude oil and natural gas had its impact on the Borsod Chemical Plant as well. In 1962-1963 a new energy supply unit was installed based on natural gas. Gas was imported from Romania and was supplied from domestic sources extracted at the Hajdúszoboszló natural gas field.

Making fertilizer was an energy intensive mode of production. However with the improvement of the production technology, energy needs could be significantly reduced per production ton. Energy consumption for a ton of ammonium in the BVK 4

Coke based	26 million kcal
Natural gas based method	17 million kcal
Natural gas based method under pressure	10 million kcal

In the 1960s new PVC production units were constructed in the BVK. The first phase of the PVC production unit was constructed in between 1959-63. Its projected output was 6000 tons of PVC dust and granules. The factory was using the patent purchased from HOECHST-HDE from Germany Federal Republic. Simultaneously, a chloride-alkali plant was constructed in the neighborhood of the new polyvinylchloride plant based on the patent of the French KREBS Co. The control system of the factory was supplied by Siemens. I would like to draw your attention to the renowned suppliers.

New products and new production methods not only reduced pollution, - but as Professor Rév suggested during our conversation the other day - new products and new by-products increased discharged pollution to Hungarian Rivers. According to the 1967 annual monitoring of the Northern Hungarian Water Directorate the Borsod Chemical Plant significantly polluted the River Sajó with oil (4 mg/l, about 12 times above the allowed legal limit), ammonia (almost 35 mg/l, about 11 times above the legal limit, it modified the chemical and biological features of the Sajó river significantly. It is worth to note that the Borsod Chemical Plant did not operate a functional waste water treatment plant until 1978. During the second half of the 1970s, a three phase mechanical-biological and chemical treatment plant was installed at the BVK, and in 1974 an independent Environmental Department was established. During the 1950s and 1960s only sediment pools were in operation which reduced the amount of by-products by evaporation and sedimentation.

Between 1971-1975, during the Fourth Five Year Plan the total costs of environmental investments were measured about 13-15 billion HUF in the Hungarian industry. That amount counted up to 2-2.3 per cent of the total industrial investments of that period and scaled up to 0.8-0.9 per cent of the GDP of Hungary. It is important to note however, that environmental investments were non productive from the perspective of the regime.

Changing lifestyle and technological needs were sign of a partly modernized industrial structure and energy regime. Coal gradually lost its significance in the slowly changing economic world of state-socialism. Because of the social changes in the Hungarian society, mining as a profession became also less attractive. By the end of the 1960s, pollution by coal was reduced, phenol disappeared, life was comfortable and moderately modernized. However, at the same time more sophisticated products and production methods threatened the environment in state-socialist East Central Europe.

I feel honored to be selected as a Visegrad Grantee. I am grateful for the Visegrad Fund who enabled my stay at the Open Society Archives in Budapest. I would like to thank the invaluable help of Professor István Rév, who acted as my supervisor during my short stay at the OSA. I also would like to thank Katalin Gádoros who helped me with many practical advices prior and after my arrival. Lastly I would like to express my gratitude for the helpful and knowledgeable staff of the OSA especially for archivists Mr Örs Lehel Tari, Mr Robert Parnica and Mr Tibor Szigeti.

With Kind Regards, Viktor Pál

23.03.2011. Budapest.