A European Recommendation: The Agricultural Development of Dobrogea During the Communist Regime

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Abstract. For almost half a century following the Romanian annexation of Dobrogea, after the Independence war of 1877-1878, there had been no serious interest on behalf of the country’s government with regards to the education of locals on the cultivation of the territory’s arid soil. Few farms (Hamangia, an agricultural farm, Murfatlar, a winery, and Palas, an animal farm) were insufficiently supported, while their research was aimed locally and never sought the development of the entire region. Thus, during the communist period, the cultivation of Dobrogea’s arid land became a recommendation for Romania on behalf of Europe.

1. Introduction
The land situated between the Danube and the Black Sea, known as Dobrogea, had not seen major development until the 20th century. In order to attract a population that would contribute towards the economic and demographic development of the region, the creation of jobs, the development of agriculture, and the construction of housing became a priority. The population of Dobrogea was small and dispersed. As a consequence, much of the land remained uncultivated. The locals and World War I veterans that resided in the region used primitive tools to tend to their land. The lack of means to exploit the arid soil caused a large part of the peasantry to sell their land to owners of large estates. The primitive appearance of Dobrogea’s vast plains, wild vegetation, mud house villages, primitive cultivation methods, as well as the living conditions and the overall development of the region, had stagnated for decades. [1] In order to secure better working conditions for both the inhabitants of the region and for the entire country, the implementation of qualified agricultural work would be necessary.

2. A European Recommendation
Hence, between 1923-1924, the Ministry of Agriculture and Domains decided to organize a professional agricultural educational system that could aid in securing a qualified workforce for the development of the agricultural sector in Dobrogea. The landlord Teodor I. Miulescu sold part of his estate (300 hectares) and his mansion in Murfatlar to the Ministry of Agriculture and Domains.[2] On the 1st of December 1924, the first agricultural school, called the Murfatlar Professional Agricultural School, was founded on Miulescu's former property. The school began to operate during the autumn of 1925 following the recruitment of 15 students for the first class (most students had only graduated from primary school). The educational cycle of the Professional Agricultural School spanned four years. The Murfatlar School represented a first step in the development of Dobrogea's agricultural sector while contributing towards the economic prosperity of the region. The cultivation of the vast arid soil of Dobrogea would become a priority and a "European recommendation" during the Communist regime. News stories of the München D.P.A. (Deutsche Press Agency) included the date of the Danube Conference held in Galați on October 10th 1949. The conference hosted officials from the USSR, Romania, Bulgaria, Yugoslavia, and Czechoslovakia. However, the representatives of other Danubian countries such as Austria and Germany were not mentioned. The German mechanical engineer Oskar Poebing, a graduate of the Technical University of München and a renowned member of the European Commission for Navigation, sent a document containing a study and map to Galați that was addressed to the President. [3] Poebing likewise expressed his admiration for the successful
conference. The study, bearing the title *The Cultivation of the Danube Delta's Arid Land*, dates from October 18, 1949. The Romanian Government was already in possession of one of Poebing's anterior projects (dating from October 1938) and was confirmed as the author of the said project by the Presidential Council of Romania in 1942. [4]

An article from the München based publication *Volkischer Beobachter* (dating from April 1942) included congratulations on behalf of Antonescu's Government and the announcement that the 1938 project will be implemented following the end of the war. The first project from 1938 entailed the construction of a canal that would link the Danube to the Black Sea, affecting thus the Lower Danube. In addition to agricultural benefits, the canal would also bring numerous advantages by shortening the navigable distance and facilitating the irrigation of the dry agricultural regions in Dobrogea. Poebing's 1949 project included the middle part of the Danube and spans to Bălțiș, the Danube's point of entry into the country located on the Hungarian border. The course conceived by Poebing foresaw the construction of two hydroelectric installations on the Danube's course (as it appears from the map attached to the documents) while allowing ships weighing up to 10,000 tones to navigate it. The initial variant of the plan was created on the 10th of October 1938. However, the construction of the canal only began in May 1949 following the decision of the Political Bureau of the Central Committee of the Romanian Worker's Party.

Oscar Poebing's project traces clear directions for the development of Dobrogea, while the governing party believed in its successful implementation as a result of the unprecedented power of the Communist Party. A similar project had previously been commissioned from the engineer Engles Wilson on behalf of the Ottoman Government in 1837. A similar solution was reconsidered in 1860, as proposed by the Englishman Charles Hartley, but was met with opposition from the European Danube Commission. During World War I, a brief presentation of the canal project emerged in Budapest in 1917. The project was published five years later in an article of the magazine Analele Dobrogei (Dobrogea's Annals, Nr. 3, 1923). A brief summary of the project illustrated the full span of the canal (59.9 kilometers). Its course began in Cernavodă, traversed Carasu Valley (running parallel to the route of the railway), and ended in the port of Constanța. The total cost of the project was estimated at 114 million Hungarian crowns. The project's motto bore the name of Hungary's Ministerial Counselor, Hajos (dated "April 1917"). [5]

Between 1937-1938, the Central Administrative Committee of the Communist Party began to study possible ways to execute the canal, while subsequently generating three potential versions to do so.

Following a two year break, we can deduce that in 1940, after the reception of Oscar Poebing's first study, the administration of the Romanian Communist Party decided to implement a series of topographic elevations, carry out 130 surveys, and begin the careful observation of the region's groundwater. Based on the map sent by Oscar Poebing, the proposed course of the Danube-Black Sea Canal traversed the old valley and the plateau in a linear fashion until the port of Constanța. However, the large volume of geological and geotechnical research that had been carried out generated a series of conclusions that raised numerous problems regarding the execution of the project:

- The proposed site on the old Carasu Valley created problems due to the fact that it was clogged with fine sands, as well as layers of seonian chalk.
- Deposits of 50-meter thick polychrome clay dating from the Aptian age were found.
- Large areas made up of Baremian and Jurassic limestone and green sands were found.
- The presence of sand and mud deposits in the vicinity of coastal lakes presented a problem.

Taking the aforementioned information into account, the course of the Canal changed from that crossing the old Carasu Valley that traversing layers of Seonian chalk, to that crossing the far safer Carasu Valley-Adâncă Valley-Canara-Tasaul route. The construction of the Canal saw complications following Poarta Albă, after which Soviet aid was called upon. [6]

Thus, a composite Romanian and Soviet committee was constituted. The committee, to which Prof. Ing.N.Maslov pertained, played a decisive role in the construction of the Canal by opting to use the Maslov-Berger calculation method. A decision was made to place a second intermediary port in Poarta Albă. This port was placed in an area running convex to the Canal and its construction was dictated by the necessity to avoid great altitudes, namely, the hill in the Nazarea region (altitude of over 55 meters).
The construction of two locks to facilitate the passage from one quota to another, as well as two large electrical plants and two other intermediary ports, mechanical and naval workshops, cement factories, and more was foreseen.

The construction of the Canal played a seminal role in the development of Romania and particularly, the region of Dobrogea.

The large stretch of land in the Danube Delta was a rarity in Europe and the opportunity to cultivate it presented a great challenge. The surface of Dobrogea is larger than the surface of Bavaria and Western Germany. It is bound on the South by a straight line (the future waterway), on the West by the Danube's course, and on the North by the Black Sea. In the map attached to Oscar Poebing's project, this space is traced in red. As a comparison, the surface spans a quarter of the surface of Switzerland.

The harvesting of this muddy, uncultivated, terrain that had previously been used for limited purposes such as hunting or fishing, entailed the implementation of these following conditions:
- A well-designed irrigation and drainage system of great functional capacity;
- A cheap fertilization process, taking into account the shortest transport routes to limit costs;
- Poebing analyzed both of the aforementioned conditions in his 1938 project.

The Danube-Black Sea Canal proposed by Poebing served the following purposes:
- Shortening the Lower Danube-Black Sea (from Constanța to Giurgiu) route by 300 kilometers for ships weighing over 10,000 tons. The Canal was conceived for ship and cruiser traffic, which could cross both upstream and downstream. At the same time, the water speed for the maximum working capacity of the hydroelectric power station in Constanța remained within navigational limits.
- One of the objectives was the construction of three hydroelectric power stations for the production of electric current. Poebing compared it to the Walchensee power station in Germany, saying that Lake Cernavodă was 100 times larger than Lake Walchenseem, with production reaching rainfall of up to 12 billion kilowatts during rainy years.
- Obtaining high-quality agricultural land, its surface covering the Upper and Lower bays, that could be colonized by one million people. The population could sow and harvest two annual wheat crops, providing food for 100,000,000 people.
- The use of a drainage system with gigantic pumps fulfilling two roles: to lead the rivers and streams situated below Lake Cernavodă through the Danube-Black Sea Canal and to suction sludge and distribute it in other areas.
- According to the study, the extraction and processing of ores and coal can be done with few workers. The process could be automated by means of the electric current produced by the hydroelectric plants provided in the project.

The most important objective of the project was attaining the possibility of cultivating Dobrogea's land. The greatest problem was the remediation of the marshlands. In order to resolve this problem, the project entailed two pumping stations at Isaccea (P1) and Hârșova (P2) that would also contribute to the leveling of the Danube. Three water abstraction lakes were to be formed in Giurgiu, Turtucaia, and Cernavodă. This offered the possibility to build three new hydroelectric plants. The three plants, as well as the one in Constanța, could reach maximum charging capacity, according to the study, and satisfy a medium consumption of energy within the territory. They also secured the energy required for the pumping tasks needed for drainage (up to 12 billion kilowatts annually).

According to Poebing's project, sand and mud deposits, as well as other alluviums, would be used to fill the many lakes and ponds in the Danube Delta over the coming decades.
- The most important source of soil fertilization could be produced from sludge extracted from the Danube (no additional transportation costs were needed). The electricity used for the operation of the drainage pumps and other equipment had a low cost. The large amount of electric current generated by the three hydroelectric plants (provided in the project) facilitated this.
- Another essential aspect of the project was that the discharge of rotting vegetal residues that would be used to oxygenate the Black Sea. Poebing recalls this problem as it was discussed
during the Water Management Conference organized in München in 1949 and based on the work of Councilor Dr. Demoll who proposed this efficient and economical solution.

If the Romanian Government succeeded in bringing Oscar Poebing's plan to fruition by transforming the land from the Danube Delta into high-quality fertile land, thus providing cheap energy and fertilizers for agricultural purposes, the project would solve a national and European problem with regards to the quantity of the agricultural products obtained annually.

The construction of the Canal started in 1949. The government under the presidency of Gheorghe Gheorghiu Dej took over Oscar Poebing's old plans as well as the other studies that had been carried out. The opening of the Canal construction site took place on the 25th of May of the same year.

The works that began were locally administrated or managed with the aid of companies employed by different authorities. The works administered locally entailed excavation and port work. The works peripheral to the construction of the Canal were executed primarily by distinct enterprises:

1. The Ministry of Constructions, through its subordinate bodies, was tasked with building sheds, access roads to yards, and the administrative buildings of the Canal.
2. The Ministry of Electricity was tasked with the construction of the Sulzer Canary Plant and the Ovidiu Thermo-Electric Plant.
3. The Romanian Railway Department was tasked with the construction of railway works, railway stations, and sheds.
4. The Ministry of Agriculture was tasked with the construction of dams, as well as the restoration of degraded lands and their subsequent improvement.
5. The Ministry of Forestry was tasked with plantations and the construction of shelters and nurseries.
6. The Ministry of Internal Affairs was tasked with constructions, installations, building sheds and annexes.

These institutions collaborated with the General Directorate of the Canal for the realization of projects. For works spanning from the launch of the design theme to its execution, the following order was kept:
- The General Direction of the Canal formulated the project theme.
- Design Institutes created the design.
- The project was approved and the planning sector sought out funding. Executors were paid their respective advances.
- The director or the company contracted under the pre-enterprise regime performed the work after receiving an advance.
- The General Direction of the Canal controlled the execution of the works, received and issued the payment order.
- The General Direction of the Canal maintained the works after the reception.

The coordination of work that began simultaneously was difficult. The delayed reception of the Canal project prevented a thorough study of the plans. Thus, during the construction process, certain shortcomings that needed remediation through adaptations and compromised solutions were found that could have been avoided. The Administrative Palace, worker's housing, and the roads that were used to access the worksite were an example of this.

The organization of the workforce and worksites was difficult. Workers from every region of Romania were brought to work on the construction of the Canal. In 1949, the percentage of mechanization of the sites was only 19%, but with "Soviet aid", by April 1951, the percentage had gone up to 71%.

The propensity for the Soviet "Stahanovista method" promoted competition among workers. In order to facilitate this, both schools and workshops were founded following the Soviet Kotlear qualification method, generating nearly 2,500 equipment managers, technicians, accountants, and regulators. The implementation of these methods created a 19% increase in productivity, attaining its objective at the lowest possible cost.

The coordination of the Danube-Black Sea Canal construction project was met with problems due to the discontinuous supply of raw materials.
A letter addressed to Gheorghe Gheorghiu Dej (dated November 1951), signed by the brigade chiefs in charge of the Canal, for the 30th anniversary of the Romanian Worker's Party, mentions the great achievements that can be attributed to the Soviet methods for increasing labor productivity, the achievement of managing supplies by consulting graphs, as well as the expansion of socialist competitions between the workers.

According to the letter, the project had been a success as all of the objectives that had been set out had been met and even surpassed. [4]

Following the analysis of the investments pertaining to 1953 and the following years, the Council of Ministers (17th of July 1953) found that the other branches of Romania's economy had been neglected (the textile industry, the food and consumer goods industry) and had not developed in accordance with the need of the population. The financial means attributed to the construction of the Danube-Black Sea Canal were redirected towards the rehabilitation of the industries that had been neglected. The decision was made to halt all work on the Danube-Black Sea Canal starting the 19th of July 1953. The financial means, materials, and workforce were redistributed to other sectors, particularly those related to the development of the food and agriculture industries. The decision was not publicized. [4]

The new cities and buildings that had been constructed to serve the workers assigned to work on the Canal and its respective population called for new means to make a living. The new irrigation system and Dobrogea's land offered this possibility. Approximately 230,000 irrigation channels and 49 pumping stations had been set up during the construction of the Canal. [4] Most of the workers from the sites opened during the construction of the Canal remained with their families in these newly created settlements.

One of the urban achievements generated by the project was the construction of Poarta Albă, situated close to the second Intermediate Port near the 37th kilometer of the Canal. The city that had been erected was to have a double function: servicing both the port and its industrial area (located 400 meters downstream of the port). Following a slight overgrowth, the Administrative Palace of the Canal was built. The passenger dock and other projected buildings had been partially built: 86 houses (containing 2-3 rooms), three large collective houses, a hospital, several shops, as well as a branch of the Savings and Consignments House. The Administrative Palace, a modern and spectacular building containing 399 rooms, as well as the annexed housing, was transformed into the new technical and professional agricultural school group in Poarta Albă. The Poarta Albă Technical Educational Group, with a capacity of 1,000 students, combined all of the agricultural schools in the region of Constanța.

The building of the Administrative Palace offered a generous space for the implementation of the didactic activity. Constructed on four levels, the edifice contained two basement floors that housed a wine cellar, mechanical workshops, and classrooms, a ground floor, and two additional levels (having a surface of 3,500 m²) for classrooms and labs.

All of the agricultural schools in Dobrogea that had been founded recently (Hărşova, Negru Vodă, Babadag, Żabil), as well as the Zătreni-Vălcea Professional Agriculture Center and others, were relocated to the city of Poarta Albă in the building of the Administrative Palace. The development of agricultural vocational education was necessary for the agricultural sector.

Between 1954-1955, the number of classrooms (37) and students (920) increased. In addition to the agro-forestry, agricultural, zootechnical, and agricultural mechanics technical schools, a professional school for agricultural mechanics was also founded. The school functioned under this structure until 1962 when the technical professional agricultural schools were conceived and the mastery schools were liquidated (with the exception of one technical school of agricultural mechanics).

From 1969 to 1970, the school was converted into an Agricultural High School, in accordance with its respective specialties. Until 1991, the school operated under the name Agro-Industrial High School. New trades were set up during this time including classes concerned with plant protection agents and accounting for agriculture.
3. Conclusions
The results of this educational system became evident within Dobrogea's villages as the quality of the agricultural activities and of the products fabricated by the neighboring Agricultural Production Cooperatives and State Agricultural Enterprises increased. Thus, a growth in cereal production, horticultural production, the greater quality of animal products and livestock, as well as an improvement in the breeding of animals, could be noticed.

The improved living conditions of the inhabitants of the region could be largely attributed to the graduates of the agricultural schools. The Poarta Albă Agricultural Center had become one of the best-organized centers in the country. Compared to the agricultural school during the interwar period, the progress increased. Some graduates of the Poarta Albă schools would go on to enroll and complete higher education.

In counties such as Constanța and Tulcea, all of the Agricultural Production Cooperatives, State Agricultural Enterprises, experimental resorts, and support points had employed graduates of the Poarta Albă School [1]. The Administrative Palace was the largest agricultural school in Dobrogea, forming a plethora of agricultural specialists that contributed to the implementation of the region's agricultural development plan.

The Danube-Black Sea Canal is now a part of the important European waterway linking the Black Sea to the North Sea (via the Rhine-Main-Danube Canal). Through this route, freight destined for Central Europe from Australia and the Far East shortens its journey by 400 kilometers.

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