EARLY TENSIONS OVER ENVIRONMENTAL POLICY IN GREECE: THE ROLE OF PERPA

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ABSTRACT

In December 1967, colonel Nikolaos Makarezos announced the “Five Years Economic Development Plan'' of the military dictatorship (1967-1974). The main target of the plan was to increase the Greek industrial production to 11.4% per year so as to make Greece a significant industrial power in the Balkans. Environmental design was not an issue for this industrialization rush. Ironically, during the same period the dictatorship decided to create the first organization in Greece to deal with environmental pollution. A few years later, in 1973, the Greek state, with the assistance of the World Health Organization [WHO], established the Environmental Pollution Control Project of Athens [PERPA] in order to monitor environmental pollution. For nearly two decades, PERPA was measuring pollutants, conducting scientific research and proposing measures and legislations to reverse the rather extensive environmental damage. In regards to industries, it focused on encouraging them to invest in new anti-pollutant technologies. Greek industrialists were actually very reluctant to do so. While undertaking field research and measuring pollutants, PERPA realized that even when the Greek industries happened to be equipped with anti-pollutant technologies, they could not modify them so as to adjust them to their needs. Evidently, there was a lack of engineers with environmental knowledge in the Greek industry. The paper introduces to the role of PERPA between 1973 and 1989 through the lenses of Environmental History and the History of Technology. The paper aims at ushering in the opening of the ‘black box’ of scientific theories and technological artifacts in PERPA-related initiatives. Our primary material comes from documents that PERPA authored or collected, and its reports and proposals to political authorities. Based on our research so far, we find it reasonable to suggest that PERPA’s role was restricted to documenting and advising the Greek governments. PERPA had no real power when it came to implement and enforce environmental policies.

KEYWORDS

Environmental History; History of Technology; Industrialization; PERPA; Pollution;

1. INTRODUCTION

The study of institutions is a field of study that can help us understand many aspects of the relationship between technology, science, society and the environment. In Greece, the institution that was responsible for environmental issues for nearly two decades was the Athens Pollution Control Program, known as PERPA [ΠΕΡΠΑ – Πρόγραμμα Ελέγχου Ρύπανσης Περιοχής Αθηνών]. As we intend to show, PERPA was an early environmental organization. In the period of its institution, the scientific study of and legislation about environment issues were at an infant stage in Greece. PERPA would measure pollutants, prepare scientific

studies, and serve as the main advisor to the Greek state, and as its representative to international scientific conferences and seminars. It proposed measures that could become part of the legislation in order to reverse the already extensive environmental damage. PERPA's contribution to attempts at an early environmental legislation in Greece was decisive.

The paper has two objectives. The first is to introduce to PERPA's proposals regarding the reduction of the extensive environmental pollution that was due to the Greek industry. These proposal were based on scientific measurements. Before PERPA, any attempts at measuring pollution were fragmentary. The second objective of this paper is to introduce to the history of PERPA's efforts to introduce environmental design to the Greek industry. As PERPA emphasized in a technical report of year 1989, the vast majority of the Greek industries "*are in a phase of underdevelopment in regards to environmental issues compared to European standards (…) and only with proper and systematic engineering the environment can be protected*".[1] This, however, PERPA effort was surrounded by great tensions.

2. METHODOLOGY

The paper combines inputs from Environmental History and History of Technology.[2] Our main primary sources are the PERPA archives and technical reports. These archives contain suggestive technical studies, compiled by the scientific staff of PERPA. They cover various fields. The archives also include talks given by PERPA executives at various conferences.

We rely on these sources to examine if/how industry-related technologies were appropriated/reconfigured so as to address environmental issues even though they were did not initially emerge with an environmental design in mind. In doing so, we go over how PERPA tried to propose measures/solutions based on the measurements and research it conducted and how it tried to implement them through laying out policies for environmental design, even in retrospect.

3. PERPA AS AN EARLY ENVIRONMENTAL ORGANIZATION IN GREECE

In 1970, the Ministry of Social Services of the Greek dictatorial government (1967-1974) requested the assistance of the World Health Organization [WHO] to set up a program to control environmental pollution. In the context of the 'Preliminary Program Action Plan', funds were requested by the United Nations Development Program [UNDP]. Upon their approval, the Program was launched and details regarding the foundation of PERPA were discussed. The Athens Environmental Pollution Control Program [PERPA] was established in September 1973. It was a three-party joint venture between the Ministry of Social Services (representing the Greek state), the UNDP, and the WHO. In 1983 PERPA was integrated into the Ministry of Housing and Environment as a distinct department.

PERPA was gradually staffed with scientific and technical personnel, which, in the following years, moved on to specialise in various fields. By 1975, PERPA publishes its first major technical report and states its aims as following: "*The main objective of the Program is to assist the development of adequate key environmental data and to develop programs to control the atmosphere, water, waste and noise, and to contribute to the development of an environmental strategy, policy-making, management structure, legislation, and*

development of measures for protection".[3] At the time, there was little concern about environmental issues in Greece. In fact, for many years there were no systematic and robust scientific studies on the extent of environmental pollution, not to mention the absence of any environmental legislation. No discussion about any kind of environmental design existed before the establishment of PERPA, and, in any case, there was no design that would take into account scientific data regarding the impact on the *environment* of industrial production.

The 1970s was a lost decade for the environment in Greece. This would lead to many outbursts of crisis in the following decade. A 1983 OECD report characterized Greece as a country in "*environmental crisis*" and asked the government to introduce drastic policies and interventions in order to reverse the situation, without caring about the political costs.[4] Meanwhile, in the early 1980s Greece was undergoing a political change. After many decades of conservative party ruling and seven years of dictatorship, a left-leaning party, which turned out to be rather populistic, repeatedly won the elections and ruled the country throughout the 1980s.

PERPA was always in the middle of a political conflict over environmental issues. The pressure it received was substantial, because of the accumulation of problems over many decades. These problems asked for immediate solutions and necessitated difficult measures. Amidst conflict, in 1979 PERPA was in danger of elimination, while the contracts of its scientific and technical personnel were expiring shortly. After interventions by the WHO and pressure from the press, the social movements and the political left, PERPA survived the threat and continued its operation.[5]

PERPA managed to survive and remainan autonomous organizationdespite the numerous adversities it encountered during the years of its operation, before being absorbed, finally, by the Ministry of Enviroment. As an organization, it initially contributed to the scientific documentation of environmental problems and the formulation of the first environmental legislation in Greece. The scientific work and the measures that it proposed were very close to the standards of the USA and other European countries. The OECD even praised its role in controlling environmental pollution and its scientific and advisory effectiveness.[6] Nevertheless, it constantly operated in a highly contested terrain, where numerous problems were accumulating over the years.

4. THE GREEK INDUSTRY: EXPECTATIONS AND COLLAPSE

It has been argued that most of the industrial investments in Greece were made in the early-60s. Crucial was the consent of both the political left and right, which shared a strong interest in industrialization. During this period many new industrial plants were founded and the expectations from industrialization were high. [7]

On the 16th of May of 1966, a year before the overthrow of the Greek Republic by a military coup, a conference by mechanical and electrical engineers was held under the topic "*The industrialization of Greece*''. In the scientific journal of the Technical Chamber of Greece we can find all the papers of this conference. The majority of them made a point of the fact that Greece´s industrial production fell short compared to other developed economies

of the West, the USSR, but also neighboring Bulgaria. Decisive leaps would be neededto cover this gap, so that Greece could be able to reach the level of trade balance of other countries.[8] Another issue that was raised during the conference had to do with the lack of scientific personnel to lead the Greek industry to more efficient production through the introduction of new technological equipment. It is noteworthy that not even one of the more than 30 presentations made a single reference to the possible effects of industrial production on the environment. We consider this to be indicative of the fact that a dilemma between industrial development and potential environmental impacts did not exist back then.

Two years later, colonel Nikolas Makarezos, the so-called "economist of the Junta", presented the "Five-Year Economic Development Program 1968-1972" that aimed at the rapid industrialization of the country through an increase of 11.4% in production per year.[9] It was not a secret that the leaders of the dictatorship had close relations with Greek industrialists and ship-owners. The dictators were ready to satisfy their demands and successfully accelerate the industrialization of the country so that they could maintain their power.

The Western world was gradually entering a period of de-industrialization in the early 1970s. The period from 1960 to 1973 was characterized as an era of rapid industrialization in Greece. Then the economy turned mainly to the tertiary sector of the economy and the efforts to industrialize the country further gradually fell behind. The oil crisis of 1973 hit hard the Greek industry, because Greece was one of the countries that depended the most on the import of fuel and raw materials. Investments in the industry had been null or falling after 1975.[10] This meant that the prospect of investing in the reduction of environmental pollutants would appear as a luxury to the Greek industrialists

5. ENVIRONMENTAL DESIGN AND PERPA: AN ATTEMPT TO REVERSE AN ALREADY DIFFICULT SITUATION

Industrial expansion in the area of Athens and its outskirts in Attica was not achieved through standards of design that take into account possible effects on the environment. The work of PERPA was even more difficult, as it had to address a challenge that was quite difficult in financial terms, but also spatially. Indicatively, in 1983 only 54% of the industries in the Greater Athens Region were located within the industrial zones while the rest were scattered within the city[11].

The first technical report of PERPA, published in 1975, argued that in order to develop rational programs for the reduction of environmental pollution in Greece a systematic effort to collect the necessary data was indispensable. During the first two and a half years of its operation, the scientific teams of PERPA took the following steps: 1) sampling of pollutants; 2) inventory of pollution sources; 3) selection of mathematical models for the visualization of the pollution; and 4) research on the effects of pollution on human health.[12] Reading the relevant reports leaves no doubt that the scientific personnel of PERPA managed to cover ground and organize its services in a way that successfully simulated the Western world standards – and did so in a very short time.

In the 1975 technical report, PERPA focused on two Attica areas: Drapetsona and Elefsina. These two areas were the

most heavily industrialized. In these areas, there were large cement industries, refineries, fertilizer processing industries, etc. PERPA was clear that the pollution they caused in the atmosphere mainly affected the residences and neighborhoods around the industries. Regarding the transfer of smoke and various toxic particles to Athens, PERPA concluded that, due to the direction of the winds, this occurred only for 20 days per year resulting in pollution that reached the Athens center[13]. The suggestion was to reduce production during these 20 days. This measure was strongly criticized by both the Hellenic Federation of Enterprises [SEV] and the Technical Chamber of Greece [TEE], since it would harm industrial growth.

PERPA also suggested increasing the length of the chimneys so that theirs smoke would be released higher into the atmosphere, a common environmental strategy at the time. One other crucial measure, persistently proposed by PERPA, had to do with the switch from fuel oil (especially mazut) to diesel. Based on its predictions, this move alone would reduce SO2 emissions by 25%. PERPA also advised the Greek state to create a plan for the industrial zones that would incorporate environmental protection provisions. Moreover, it advised that the Greek state should not grant new licenses to industries before environmental protection measures would be in place This meant that highly polluting industries would have to relocate in the near future. PERPA also recommended to site industries outside the urban network, at least 10 km away from it.[14]

Through field studies, PERPA concluded that, in many cases, the Greek industry did not maintain or operate pollution control facilities. This was compared to driving a car without brakes. Therefore, the suggestion was to directly urge the industry owners to change this. If a polluting industry was not able to either transform its production or change the raw materials and fuels it used, then more drastic actions ought to be followed. One of these was the obligatory transfer of the industry to another area; or in some cases, even the removal of small residential areas surrounding the industrial units. The state would provide incentives for such transfer/removal. So, the pressure on the industrialists and unit managers had to be intensified in order to assume their responsibilities regarding environmental protection. Similar suggestions raised a storm of reactions within the OECD and were largely considered to be unrealistic. Given that this, PERPA looked for other options, such as, first and foremost, updating the technological equipment/machinery/ infrastructure of the Greek industry, so that it could be sustainable in the long run.[15]

In the aforementioned 1989 report, PERPA presented the reasons behind the lack of environmental engineering in most Greek industries. To start with, the production of small and large industrial units was based, relatively speaking, on old and empirical methods of production, which were not as modernized as they ought to be. Being outdated, these methods of production resulted in a large environmental footprint. Environmental engineers had never worked in Greek industrial units. Moreover, the tasks of the scientific personnel in large industries did not include addressing environmental issues. As for anti-pollution technologies, PERPA had found that they were purchased without care for appropriate specifications. According to the PERPA report, the sole criterion for their purchase was their cost. This raised production costs in the long run. PERPA lobbied for the creation of an institute commissioned to

specialize in the connection between the environment and technology since 1975. This institution would undertake research on anti-pollution technologies that were appropriate for the Greek case.[16]

5. TENSIONS BETWEEN PERPA AND GREEK INDUSTRIALISTS

The Hellenic Federation of Enterprises [SEV] has been publishing its annual report on the state of the industry in Greece since 1947. We examined all their reports from the 1970s and 1980s and found only one reference to the protection of the environment, in the 1977 report. PERPA's argument about the lack of anti-pollution technology in the industrial installations led the SEV to ask the Greek government for state funding to advance the protection of the environment via the installation of anti-pollution technologies. More specifically, SEV requested: 1) loans that would cover 100% of the cost of the modifications required, 2) loans with a repayment horizon of up to 12-15 years, plus a grace period, 3) loans for investments in the environment that would not be limited by the poor financial profile of an industrialist, and 4) a tax-free import policy for technologies that were friendlier to the environment, as well as for any additional modern mechanical equipment needed to reduce the total production costs. These requests by the SEV were advanced by arguing that they represented a "social investment".[17] The owners of the industries did not consider it an obligation of their own to protect the environment and make efforts to reduce pollution. Notwithstanding, they considered that it was a social issue that the state had to address by providing them with loans without any real contribution of their own.

In 1982, Mrs. Efstathia Valliantza, an environmental engineer who had worked at PERPA since its foundation, recounted the negotiations with the SEV delegation she was responsible for. Her task was to draw the technical guidelines of the first environmental protection law. She recalls that the proposals had caused panic to the SEV industrialists who rejected almost all the articles of the draft. For two weeks the discussions between PERPA and the SEV delegation took place in a tense atmosphere. PERPA wanted to introduce a new environmental licensing procedure for the industries in a forthcoming law, approved by the new populist socialist government.[18]

Soon there after (1983), an *1983* OECD report became explicit about the need to intensify the inspections of the Greek industry. PERPA had begun this task by 1982, using 22 appropriately equipped vehicles as measurement stations. For the OECD report, there was in Greece a lack of will to implement laws related to the environment. Its authors recommended that the Greek government moved on to exercise constant control on environmental issues, against any reactions and pressures by the industry.[19] OECD thought that the transformation of PERPA into a standard department of the Ministry was very important, as this would strengthen its role and would make possible the implementation of the proposed policies.

In 1986 PERPA presented to the Greek industrialists with a five-year program for the development of Greek anti-pollution technology.[20] Given that Denmark and Israel were two countries with size similar to that of Greece, PERPA had studied their efforts to develop such technologies. In fact, these two countries were by then able to export technological equipment/infrastructure and technical expertise. This proposal would not only be environmentally beneficial, but would also

favor Greek technological innovation. However, these proposals were not adopted, the principal reason being that the Greek market was very small - an argument often invoked by Greek industrialists.

6. CONCLUSIONS AND DISCUSSION

In this paper we sought to conceptualise PERPA as an early-stage environmental protection and environmental design organisation in Greece.

First, we provided a short history of the organisation from the mid-70s through its dissolution in the late-80s. During this period, PERPA's scientific personnel succeeded in conducting several systematic and robust scientific studies on the reach of the environmental pollution in Greece, mainly caused by the Greek industry, and moved on to propose environmental legislation and relevant policy making. Therefore, it worked as an environmental design organization that treated scientific data and environmental preparation as a precondition for proper industrial production.

Second, we gave data about the industrialization of the above-mentioned period vis-a-vis the lack of environmental design and concerns about the environment, at least at the industry and the policy making level. As we showed above, a dilemma between industrial development and potential environmental impacts did not exist in Greece at that time, despite the considerable rise of environmental concerns at the same time in the Western World.

Third, we analyzed the attempts of PERPA to organize and regulate the industrial expansion in the outskirts of Attica through the introduction of quality standards and policies to limit the impact of industrial production to the environment.

Fourth, we showed how the PERPA initiatives generated debates and conflicts with the Greek industrialists, who did not perceive environmental pollution as their own responsibility. Moreover, they advanced a rhetoric and a public discourse that presented declaring environment as a social and not an economic or development issue of their own. The Greek industry appeared very reluctant when it came to accept any kind of environmental design and the introduction of licenses and *permits* of relevance to environmental protection.

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