

Discussion of the paper entitled "Charging polluters for financing water pollution abatement"

The very interesting report named above supplies highly valuable information concerning the steps taken under the act of legislation of 1 December 1970 to reduce water pollution in Holland by applying the principle that 'the polluter must pay in proportion to the pollution he causes'. One of the agencies in charge of this task, the agency for the north-western strip, has been active in a leading capacity since 1965. Its experience gives an idea of the results which can be obtained both in terms of the programming needed for the structures and investments as well as in terms of pollution reduction, especially in the industrial sector.

1. As for the programme, it must be noted it was prepared as a function of the quality goals to be attained for water in the natural setting (BOD $^{20}_5$ below 5 mg/l, O_2 above 5 mg/l and never below 3 mg/l, with concentrations of toxic substances below dangerous levels). These objectives closely conform to both European standards and those studied by the OECD. The means to be used include the construction of treatment stations for effluents before discharge and some stations located on the canals themselves processing the full volume. The later solution — of which one large-scale installation is under construction in the Ruhr Valley on the Lippe — is possible in the case mentioned, because the natural volume of waste is small. Two facts mentioned by the authors are highly significant:

- The small number of installations planned, a total of 18 for 80 municipalities and an equivalent population of 2.5 million inhabitants in the future, demonstrates the desire to concentrate effluents found both in many nations and in France; this permits taking advantage of proportional savings.
- The fact that room cannot be found in the Plan for some 10 old stations out of 14 proves that a coherent programme is necessary at the earliest to avoid the loss of unplanned investments. This observation was also made in France following the creation of new basin organisations.

The increase in the cost per equivalent inhabitant resulting from the Plan from 2,5 florins around 1965 to 9.65 florins in 1972 and 20 florins around 1980 followed in no change in terms of fixed currency is significant. The breakdown of this cost (see table below) disregarding the overly specific problem of transportation, shows that treatment costs slightly exceed \$4 per inhabitant, a figure similar to the one obtained in France and Germany for large installations (for an equivalent population of 100,000). Its relatively small size compared with the average income forecast for this period *shows that the campaign against pollution is both feasible and economical provided it is waged within an adequate framework with careful planning.*

	Investment costs	Operating costs	Total
Treatment	13	2	15
Transportation and pumping	4	1	5

2. Application of the principle that 'the polluter must pay' and authorisations for the discharge of waste produced fast results, since the pollution caused by industry was reduced by 70 % in a 5-year period. The charges paid for waste (\$ 3 at the present time, \$ 6.30 around 1980) explain the direct effort made by industry which receives no financial support from the Agency but only advice. In France, where an incentive system of the same type has been in use since 1969, results have been longer in coming, unquestionably because the fees are still relatively modest (\$0.50 in 1971 and less than \$ 1 around 1975), although the incentive is increased by the payment of aid for antipollution investments financed by the fees and reaching 40 to 50 % of the cost.

3. Equality between domestic and industrial polluters is essential to the success of such a policy. It is determined using the same unit of measurement, the imaginary equivalent inhabitant, corresponding to a certain weight of oxidizable matter and discharged matter in suspension. The simplification provided by an all-inclusive pollution table giving a scale to be applied for all polluting activities as a function of the number of workers or production is also valued in the Ruhr Valley and in France. In the latter nation, there is only one table thus avoiding disagreements between one basin and the next. In place of the table for heavy polluters, the measurement is also in France although less consistently. Naturally, when the table is used the results of the calculations are reduced by subtracting the pollution removed before discharge if a purification plant exists.

4. The existence of several agencies for nonpublic water and state action for public water leads to a very range of fees. It must also be indicated that no fee is collected for discharges in estuaries or at sea. However, the authors who have provided this additional information feel that these differences will diminish (of which a portion is due to setting up problems) and that the state will be able to reduce them by providing aid to those areas where costs are too high.

In France, where there are only six agencies, the gap is much smaller (less than 2). The state also helps out by temporarily aiding certain industries which are too heavily

burdened to pay their fees. In this country waste discharged at sea or in estuaries is taxed unless in dumped at long ways away.

5. In addition, from correspondence with the authors — for which they are to be thanked — additional information has been obtained concerning pollution reduction in industry. As is also the case in France, the largest advances have resulted from changes in manufacturing circuits and processes more than from the construction of pollution-eliminating installations. In addition, these methods are often the least expensive; consequently, they are the first to be used. However, to obtain more complete elimination of pollution the construction of treatment facilities remains necessary.

6. The comparison made during this discussion with French agencies would be incomplete if we did not point out that the latter only play a financial and technical role but do not build the facilities which continue to remain under the full responsibility of the communities and industry.

When the freedom of political and private officials is better respected, effectiveness is reduced. On the other hand, the Dutch system (along with the system used by the German agencies in the Ruhr Valley) leads more easily to better performance and efficient use of the installations administrated by the most competent specialists (the ones from the agencies). In both instances, the state or regional authorities who approve both programmes and rates guarantee that the system will apply the government's policy.

With these exceptions, however, the various solutions are based on a fundamental principle, this being that since *the cost of the campaign against pollution is borne directly by the polluter it is incorporated in the actual cost of his operations*. In a free economy this is the only means of making rapid progress in protecting the environment. The fact that use of this doctrine is planned or already in effect in socialist economies (such as Czechoslovakia and Poland) is an indication of its effectiveness.

Bibliography

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