

BASE-METAL MINING IN THE IRISH REPUBLIC

A growing problem facing West European Governments has been an increasing dependence on imports of the raw materials on which West Europe's industrial production and hence economic prosperity are based. This can be illustrated, for example, by the case of zinc. In 1974, the nine members of the E.E.C produced 304 000 tonnes of zinc from their own mines, yet accounted for 1 382 000 tonnes in terms of industrial consumption. In this context, a significant development has been the emergence of the Irish Republic in recent years as a substantial supplier of base metals, particularly zinc and lead, to its E.E.C. partners.

Ireland has had a long history of widespread mining activity, but the mines in question were, for the most part, of little significance, and the opening up of large scale deposits outside Europe in the latter part of the nineteenth century meant that by the turn of the century, the Irish mining industry had become virtually defunct. A resurgence of interest occurred in the 1950s, and originated in North America where there was growing pressure on indigenous supplies, and from which companies were attracted to Ireland partly by Government tax incentives, but no doubt principally by the promising geological conditions.

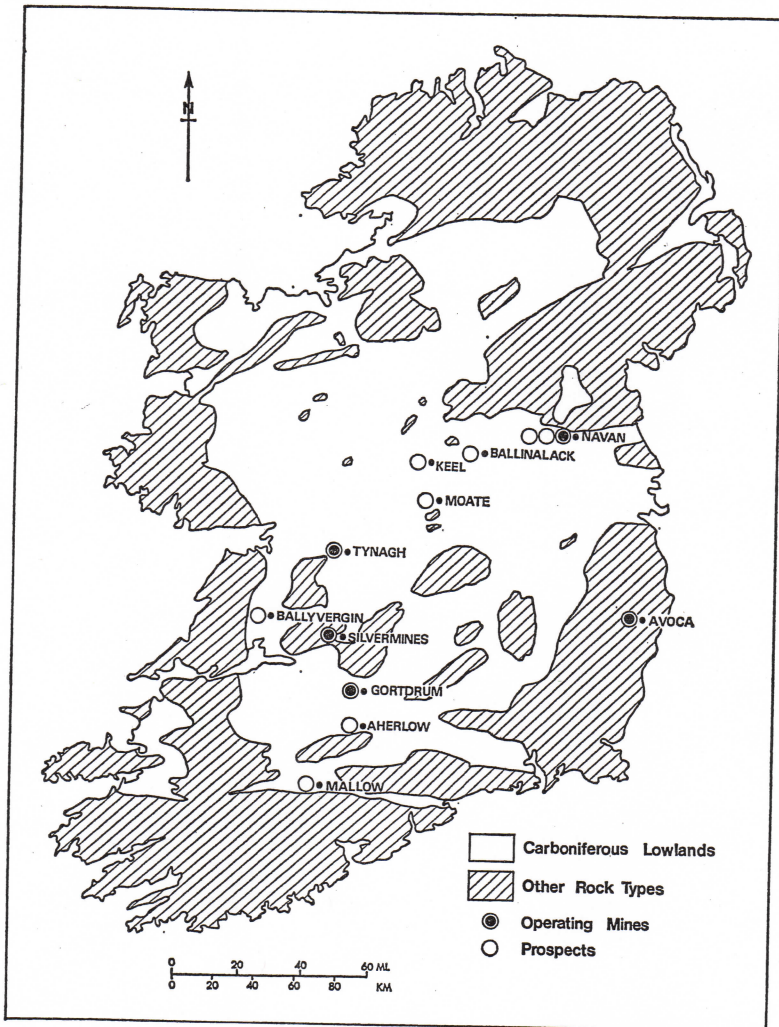


Fig. 1.—Ireland: base-metal deposits

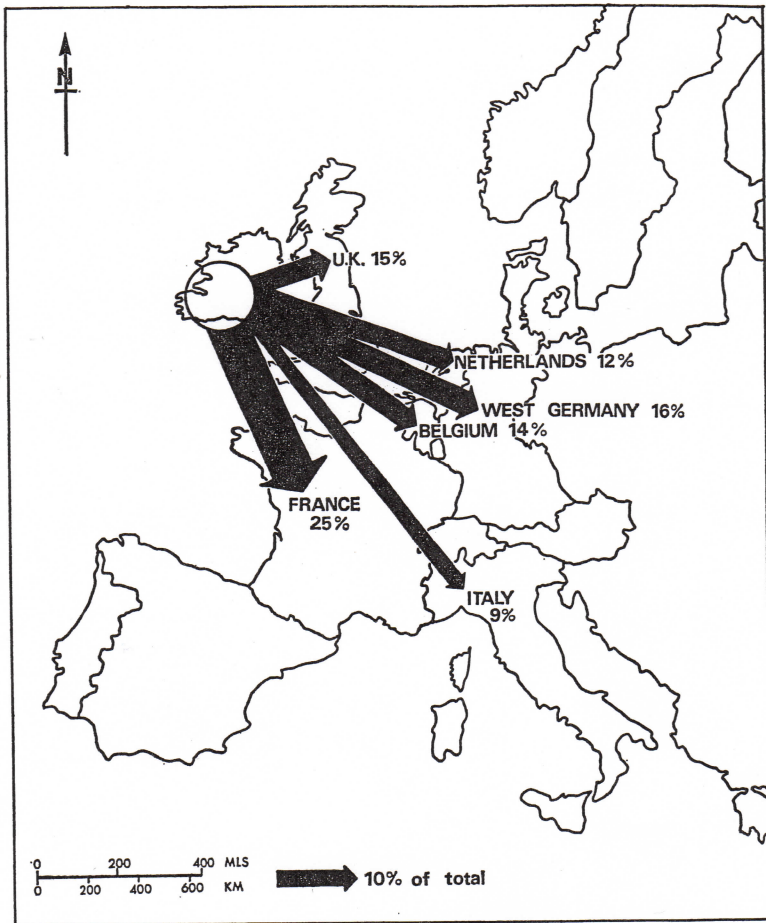


Fig. 2.—Ireland: zinc exports 1966-74

The major focus of exploration has been the extensive carboniferous limestone lowlands which cover some 40 per cent of the country's land area, and a number of significant metal deposits of remarkably similar configuration has been discovered in limestone environments during the 1960s and 1970s (Fig. 1). Invariably these deposits have been found in association with ENE/WSW-trending faultlines, spreading out laterally along the bedding planes of the host limestone, and consisting normally of either sphalerite (zinc sulphide) and galena (lead sulphide) or chalcopyrite (iron-copper sulphide). The most important finds (at Navan, Silvermines and Tynagh) have all been of the former variety. The most popular theory of genesis is that the faults in question act as avenues of escape for mineral-bearing hot aqueous solutions deriving from igneous sources deep in the earth's crust. As these solutions approach the surface they cool rapidly, precipitating the contained minerals: these are then found as replacement features in the limestone, some of which is dissolved and removed by the passing hot solution.

The first major commercial discovery was made at Tynagh in County Galway (Fig. 1), and production began in 1965. This mine currently produces about 45 000 tonnes of zinc/lead annually, although in its earlier, opencast stage, production was at a higher level. A second major mine at Silvermines, County Tipperary, opened in 1969 and produces about 55 000 tonnes of zinc/lead annually. Production began in 1977 at Navan, County Meath, where the projected annual output will be 340 000 tonnes of zinc/lead, making this one of the

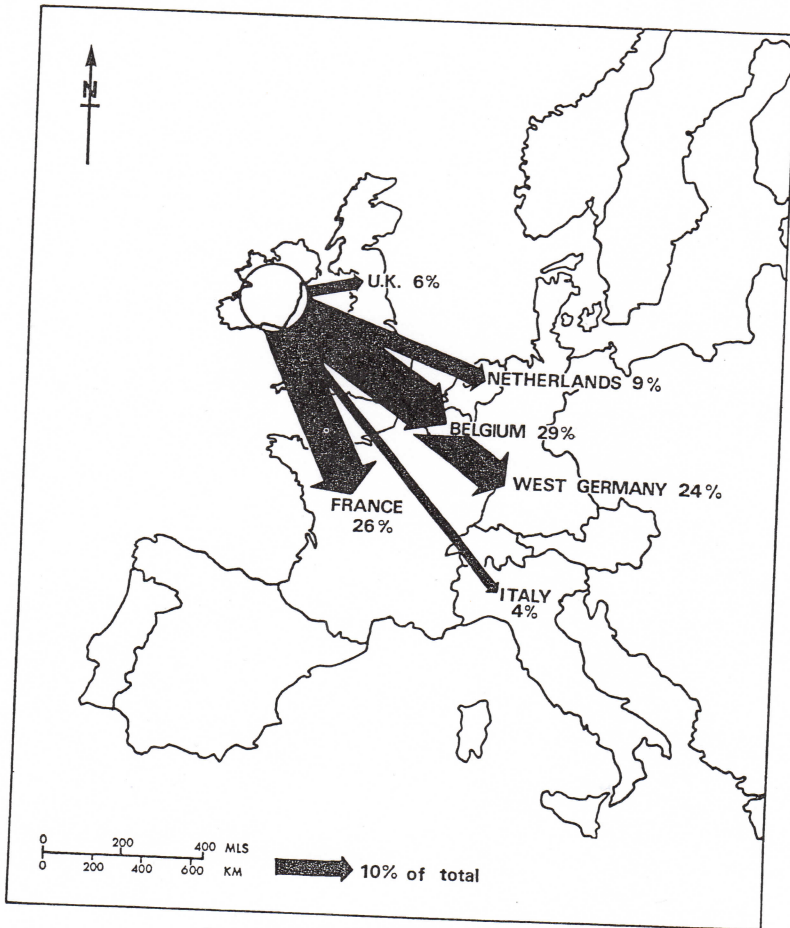


Fig. 3.—Ireland: lead exports 1966-74

largest mines of its type in the world. Thus, by 1980, Ireland could be producing approximately 450 000 tonnes of zinc/lead annually, making it by far the leading E.E.C. producer and a major producer by world standards. In addition, a number of promising prospects are currently undergoing evaluation (Fig. 1), and further zones of mineralization have recently been identified.

Over 90 per cent of the output from Tynagh and Silvermines has gone for smelting to the six leading industrial economies of the E.E.C. (Figs. 2 and 3), while the Navan output is destined for smelters in the United Kingdom, Belgium, West Germany, France and Spain. However, this utilization policy has not gone without criticism within Ireland. There have been growing complaints that the present development pattern merely maintains Ireland's position as part of the underdeveloped periphery of the West European industrial heartland, and that its natural resources should instead be directed towards the establishment of an indigenous industrial base. The Irish Government has responded to this criticism, and plans are now at an advanced stage for the construction of a zinc smelter which will consume part of the Navan output. It is expected that "downstream" zinc-using industries will be established in due course.

For many, the kernel of the problem is that Ireland's mines are controlled by foreign companies. These multinational companies, it is argued, are more interested in integrating their Irish operations into their global organizations than they are in integrating them into

the Irish economic structure. The mines, in consequence, act simply as enclaves within the Irish economy, and not only are the forward (and most of the backward) linkages located elsewhere, but even the profits leave the country. One study of the Tynagh mine suggested that only 20 per cent of the revenue being created by the mine actually remains within the Irish economy. Again, the Irish Government has tended to respond to this argument by stiffening the financial terms under which the mines operate, and by taking a minority shareholding in the Navan mine, while there has also been talk of reviving a defunct state mining company.

Apart from the definite prospects currently undergoing evaluation, the prospects for further commercial discoveries are generally considered to be good. Hitherto, large expanses of the limestone lowlands have been excluded from the exploration programme due to the presence of lakes and bogs—a legacy of glaciation—which have ruled out conventional prospecting techniques. It has taken the mining companies some time to come to grips with this problem, but once these difficulties are overcome, a new exploration phase will begin. In addition, the possibility of important discoveries outside the limestone area should not be ruled out. Of particular interest in this context is the Caledonian region in the southeast, where a small copper/pyrites mine is presently in operation at Avoca, County Wicklow (Fig. 1). More recently, some attention has been devoted to uranium exploration, with the aid of E.E.C. grants, and here the granite/quartzite regions around the seaboard have merited most attention.

A particular inhibiting factor as regards exploration in the Irish Republic is the question of mineral ownership. Unlike Northern Ireland, where all mineral ownership has been vested in the crown, the situation is much more complex in the Irish Republic. Here, the state has apparently acquired the bulk of the mineral rights appertaining to that land (90 per cent of the total) which has been redistributed under various Land Acts going back nearly one hundred years. However, the widespread distribution of cases where mineral rights are either privately owned or in doubt makes exploration a hazardous venture, since no mining company has an absolute guarantee that it will have access to any deposits discovered. This problem led to a much-publicised legal battle with respect to the Navan mine, which was eventually resolved by a division of the ore body between two separate companies, a solution which is obviously not conducive to optimal development. Little progress seems to have been made at this stage towards finding a satisfactory general answer to this problem.

In the long term, the degree to which Ireland will contribute to the E.E.C.'s supplies of base metals—so crucial to an industrial economy—will obviously be governed in the first instance by the extent of further discoveries within Ireland. As has been seen, the prospects in this context are quite good. However, the crucial factor will no doubt be the outcome of the current debate over mineral utilization policy. Under the present policy, the remainder of the Community is guaranteed an ongoing supply of the required raw materials. Should the Irish republic, on the other hand, decide that its natural resources be utilized exclusively for its own industrial development, then the presence of these resources within the Community's borders will be of little consolation to the existing centres of industry.