

## CHAPTER SEVEN

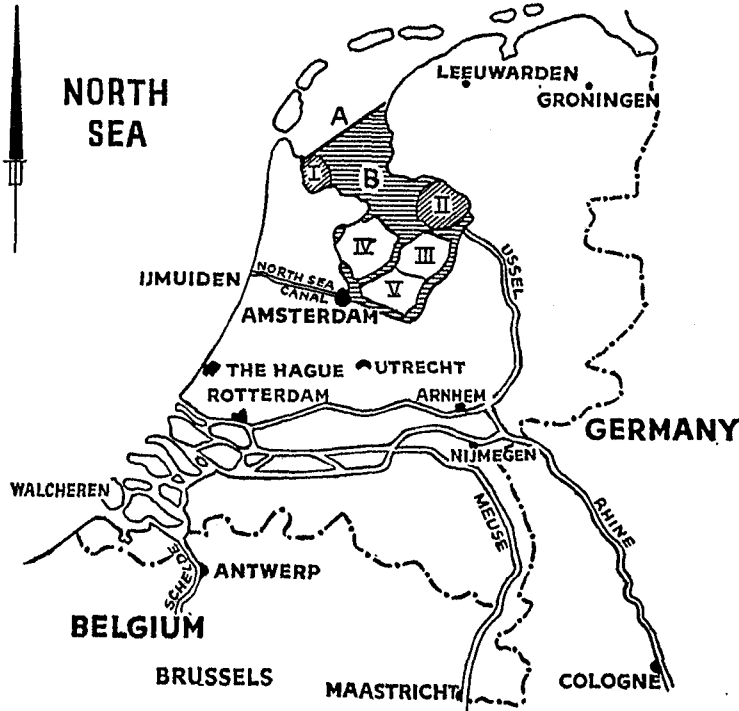
# THE NETHERLANDS' ZUIDERZEE-PROJECT

THE Zuiderzee-Project aims at the reclamation and colonization of about 550,000 acres of land from a shallow sea—the parts to be reclaimed are not deeper than 15 feet below sea-level—in the centre of the country (see map). When the project is finished, it will mean an increase in the surface of cultivated land of about 10 per cent. The soil of the new area can be classified for the greater part as very fertile. The reclamation is being carried out by the Dutch Government, according to a law introduced to the parliament by Lely, the Minister of *Waterstaat* (department for the maintenance of dikes, roads, bridges, canals, etc.) and passed in 1918. Lely, as a former employe of the *Zuiderzeevereniging* (a private association for the study and the promotion of the reclamation of the Zuiderzee) made the first plan soundly scientific.

The first phase of the work was the construction of a huge enclosing dam 20 miles in length, from the province of North Holland to the province of Friesland, which separated the Zuiderzee from the North Sea. On the dam a broad highway was built which facilitated communication between the western and the northern part of the country and still left space for a double-track railway. The dam was finished in 1932. The construction of the enclosing dam made the Zuiderzee a lake (it is now called IJsselmeer). This IJsselmeer as a whole will not be reclaimed, but in the lake five polders will be made and a large surface of open water will remain (B on the map). This lake is necessary because: (1) there must be a reservoir for the water coming from the river IJssel; (2) the greater part of this remaining lake is too deep to be reclaimed; (3) the bottom of the lake partly consists of poor soils; (4) this lake gives an enormous reservoir of fresh water for irrigation, drinking water, and several other very important purposes. The polders are made by building a dike round the area to be reclaimed. When the dike is complete, the water is pumped out by pumping stations.

During the construction of the enclosing dam, the dike surrounding the first polder (the Wieringermeer, I on the map) was built, and in 1930 this polder of 50,000 acres became dry. At the very end of the war in 1945 the Germans blew a gap in the dike and the Wieringermeer was again flooded, but at the end of 1945 it was reclaimed for the second time. In 1937 the construction of the dike

# GENERAL MAP OF THE NETHERLANDS



A	Enclosing Dam . . . . .	20 miles
B	Yssel Lake	
I	Wieringermeer Polder . . . . .	49,000 acres
II	North-east Polder . . . . .	117,000 acres
III	East Polder . . . . .	128,000 acres
IV	West Polder . . . . .	134,000 acres
V	South Polder . . . . .	110,000 acres

of the second polder (II on the map) began, and in 1942 this polder, of 120,000 acres, was also dry. Some years ago the construction of the dike, sluices, and pumping stations of the third polder (III on the map) started. The completion of this polder will be delayed for a year, because of the disastrous flood in the province of Zeeland at the beginning of 1953. All the machinery, ships, technicians, and labourers available in the dike-building trade were needed for the reconstruction of the dikes in the flood-area. Nevertheless, we hope

that in 1957 the third polder will be pumped dry. At the moment it is thought that it will take about twenty years to finish the whole project.

The members of parliament who voted in favour of the law of 1918, mentioned above, were certainly conscious of the fact that they inaugurated an immense project, but probably they did not understand then how great was the challenge they gave to the Dutch people. Certainly, although Lely's plan was well prepared he did not foresee all the problems. At times they demanded the utmost of the technical, scientific, and organizing capacities, and sometimes, too, of the material resources, of the Dutch people.

### *Engineering and Agriculture*

The first important problem was the construction of the enclosing dam. Notwithstanding the long experience of the Dutch in this field, the construction of this enormous dam, which had to cross deep channels carrying millions of cubic feet of water at every change of the tide, was in certain respects something quite new. Only with the help of the Nobel prize-winner Lorentz, the most famous Dutch scientist of that time, was the course of the dam definitely established. A number of other technical problems cropped up, for which no ready-made solutions were at hand. To cut a long history short, the reclamation of the Zuiderzee gave a very strong stimulus to scientific research in the field of hydraulics and related sciences. Water engineering in the Netherlands would be on a much lower level now if this reclamation had not taken place. Former employees of the government agency for the reclamation of the Zuiderzee are now teaching as professors at the technical university at Delft, and disseminate in this way the knowledge they gathered in studying the problems of the reclamation.

Quite new, too, were the problems to be solved in the field of agriculture. Lely still thought that the land could be transferred to private farmers almost immediately it became dry. Closer study showed that it would be unwise to do so, for in some smaller polders, which were made in the nineteenth century by reclaiming parts of the bottom of the sea, the condition of the soil had given endless trouble and had caused heavy financial losses to the farmers. Normally polders at the seaside were reclaimed only when the land was silted up to such a level that it remained dry at normal high tide. The government came to the conclusion that the land should be used by a government agency till it was in normal farming condition and could be transferred to farmers without abnormal risk. So the problem of handling this soil so that it would become good farming land in the shortest time and against the lowest costs arose. The question agricultural science had to answer here was a very difficult one. There was practically no experience in this field, and extensive laboratory and field research began. A very small polder, for ex-

perimental purposes only, was made before the Wieringermeer became dry. It can now be said that the problem was solved in the right way. The soils in the new polders are now in better condition than those anywhere in the Netherlands. As well as this, agricultural science had to solve a lot of other problems, and a wealth of knowledge which is disseminated now by publications, by teaching of experts at the agricultural university of Wageningen, and on a lower level by all other means of education and communication, was the result.

### *Sociology*

Some years before the Wieringermeer became dry a sociological study of the colonization of the Haarlemmermeer—45,000 acres, reclaimed in 1852—was published. It showed that a free and unplanned colonization of a large surface of new land can easily lead to very bad social conditions in the beginning of the development of the new area. This was one of the reasons for the government resolving to take a further and unforeseen step in the direction of government interference in the development of the new polders. It came to the conclusion that farms, houses for farmhands outside the villages, and the greater part of the houses in the villages should be built by the government; colonists should be selected by a government agency; special powers of local government should be given to a governing body closely related to the government agency charged with agricultural affairs and the colonization, so that all activities in relation to the colonization and the first development of the new society could be well co-ordinated. These new tasks of creating the basic equipment and guiding this society in the first years of its development should also have been for the polder's future society based on scientific research, on sociological knowledge, and special social research. It was a pity that in 1930 social science in the Netherlands was not yet able to give real help. It was still in its first stage of development and not ready to apply its findings to the social planning of the new polder. So the government officials who were in charge of the project had to find their way, guided by common sense and by trial and error. Common sense did not fail and the men who planned the settlement of the Wieringermeer and carried it out, can be proud of their work. But on the other hand important errors were made, e.g. in the physical planning of the villages. Through lack of knowledge of the social and economic functions of a village as a centre, a wrong estimate of the number of villages required for the polder was made. As a result, the three villages which were built were located in the wrong places. This and other mistakes could have been prevented if social science had been able to do then what it could do ten years later. In 1943, after the second polder became dry, social science—which had advanced in the meantime, especially in the practical applications of

its results—was formally called in by the government agencies to give its help to the social planning in the new area. After that, the history of the relation of social science to the Zuiderzee-Project is essentially the same as that of hydraulics and agricultural sciences. The “Zuiderzee” not only called on social science but contributed to science and education; and it gave much. In a certain sense social research for the social planning of the polders is still in its infancy and the third one will show the influence of social science to a far greater degree than the second. But it can already be said that social science has been shown to be indispensable.

### *Influence*

The Wieringermeer polder has now been in existence for twenty years, though its development was interrupted by the inundation in 1945, and an important part of the second polder is already settled; we are now able to get some impression of the influence of this project on the national life of the Dutch people. The influence in the field of agriculture, in the widest sense, is already unmistakable. The two polders have become an example and a yardstick for the rest of the country. Every year thousands of farmers visit the new area, where soil conditions, land division, farmhouses, and drainage systems are better and more up to date than anywhere in the country, and where the soil yields top outputs. In this way the new polder is a stimulus for the improvement of agriculture in the country as a whole; for private activity in this field as well as for the activity of government agencies.

It cannot yet be said what the influence of the new polders will be on social life in the broader sense, especially in the rural parts of the Netherlands. The Wieringermeer polder is too small, and the North-East polder still too young, to get a clear picture of the typical features of social life which will be characteristic of the Zuiderzee area in the future. Less certain still is the degree to which those features will be a result of the careful selection of the colonists and to what degree dependent on social planning and other factors. So it is not yet clear how social life in the polder will act as a force, stimulating change in the rest of the country. But it seems almost unquestionable that social life in the polder will differ in many ways from that in the older parts of the country and that in this respect too, the Zuiderzee-Project will act as an accelerator to development in ‘the old country’.

An interesting aspect of the colonization of the new polders is the great mixture of people of different religious denominations, which will be the result. Roughly, the Dutch people consist of one-third strict Calvinists, one-third liberal Protestants and non-church members, and one-third Roman Catholics. Religion has an enormous influence on social life and social organization in the Netherlands. The three groups mentioned have, for example, their own farmers’

organizations, their own associations of employers, their own trade unions, and their own youth associations. They have, too, their own schools; the children of liberal Protestants and the non-church members attend for the greater part the so-called *openbare* (public) government schools, the Calvinists and Roman Catholics so-called *bijsondere* (special) schools, private schools run by a 'school association' and mostly of a denominational character, but subsidized by the government. In the 'old country', especially the countryside, Roman Catholics and Protestants live for the greater part in separate areas. The provinces of Noord-Brabant and Limburg are almost totally Roman Catholic, and in the northern part of the country the majority of the rural Roman Catholics are concentrated in a limited number of regions. The different groups of Protestants are more mixed, but in the countryside an important part of the strict Calvinists, too, are concentrated in certain rural districts.

Now it is accepted as an unwritten rule, that from those who apply for a farm in the polders and in other respects meet the requirements, the colonists are so chosen that about one-third are Roman Catholic, one-third strict Calvinist, and one-third liberal Protestant and non-church members. For technical reasons it is not possible to make villages which are pure Roman Catholic or pure Calvinistic, etc., and if it were possible to do so, it is probable that such a policy would not be accepted. So every village in the polder shows a population composed of the three different groups. This means that every inhabitant has to live face to face with people of a denomination quite different from his own, often for the first time in his life. When the project is finished a whole new province will show this strong mixture of denominations. From the educational and general social points of view it is very important to see how the colonists will react to this situation. It was interesting that in the early development of the Wieringermeer polder, denominational differences played little part in social life. Instead, facing the problems of pioneering gave a sense of unity. All the children attended one school, a 'unity'-school, and social organization was far less influenced by religious denominations than elsewhere in the country. But after some time, when the conditions became more stabilized, the usual pattern gradually established itself here, too. Now every village has its denominational schools, and social life in general is organized along denominational lines. Nevertheless, it is not improbable that the relations between people of different denomination in the new polders will, in the long run, be different from those in the 'old country'. The colonists face a new situation. They are not burdened with all the traditions and reminiscences which are important in determining the attitudes of the denominational groups towards each other in the other parts of the country. Perhaps the polders will in this way become an 'experimental station' and an

example for the 'old country', and influence the situation in the Netherlands as a whole.

But perhaps one of the most important educational effects of the reclamation of the Zuiderzee is the influence it has on the spirit of the Dutch people as a whole. The Dutch people have become more and more proud of this work. They see it as one of their major achievements and it gives them confidence in their own strength as a nation and stimulates the energy necessary to tackle other heavy tasks. The grim will with which the reclamation of the area flooded at the beginning of 1953 was organized and carried out would have been almost unthinkable without the peaceful fighting spirit which arose from this really national battle of the Zuiderzee.

Summarizing the educational aspects of the reclamation of the Zuiderzee at the end of this brief survey, we can draw the following conclusions. (1) Projects of nation-wide importance make heavy demands on science and higher education in the country in question. It is not sufficient to have a good master plan prepared. It shows that, during the realization of the plan, scientific research is continuously needed. Most of the research has to be done after the work has been started, and not before. If, for example, in a so-called underdeveloped country such a plan is to be carried out, having a good plan made by a group of foreign experts is only a first step. For the plan to be realized it is necessary to have permanently well-trained scientists, equipped with laboratories, research institutes, etc., close at hand to solve the problems which will continuously crop up. In fact, it demands that higher education and science be well developed in the country itself. As well as the technical sciences and agricultural science, social science is highly important. (2) Projects like this, if carried out scientifically, will have a very favourable influence on the development of science and higher education. (3) Large projects like this can have a very important influence as a stimulus for the social and economic development of the country as a whole. (4) Successful realization of projects of importance elevates the energy and the spirit of a nation.

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