

# Control of Strategic Research in Agriculture

**This comment on the Rothschild and Dainton reports is by Dr R. D. Keynes, director of the Institute of Animal Physiology, Babraham.**

In sections (ii) and (iii) of the appendix to his report, Lord Rothschild justifies his proposal that "only" 77.5 per cent of the ARC's budget should be transferred to MAFF and controlled on the customer-contractor principle on the grounds that the remaining expenditure is devoted to basic or strategic research which lacks an applied objective likely to be realized in a specified time. He arrives at the residual 22.5 per cent by adding together the budgets of the ARC's units in universities and of a few institutes that include my own. Since my autonomy would thus not be eroded, it might be imagined that I would be less disturbed than the majority of my colleagues about the probable effect of some of Lord Rothschild's propositions. This is not the case, and I wish to explain why I share their disquiet.

I should make it clear from the outset that I have no quarrel with Lord Rothschild's basic objectives if they are first to ensure that the customer has an adequate voice in the commissioning and conduct of short-term applied research, and second to strive towards a rational basis for deciding how much to spend on long-term strategic and fundamental research. Nor do I think that the existing system for determining research priorities is perfect. But as he makes very clear in his report, the identifiable imperfections are to be found more in the scientific organization—or rather lack of it—of government departments than in any obvious failure on the part of the research councils to respond to the practical needs of the nation. I therefore question the logic of handing over to MAFF responsibility for such a large part of the ARC's funds, and hence of effective control of priorities.

It is quite unrealistic to make a sharp distinction between ARC institutes and units primarily engaged on long-term strategic and fundamental research, and those, by implication, concerned mainly with short-term applied research. At all the ARC's establishments there is, as Lord Rothschild says there should be, a mix of short, medium and long-term research. As far as the proportions of the mix are concerned, the Institute of Animal Physiology does perhaps occupy

one pole of a continuum, since we are mainly occupied with long rather than short-term research aimed at achieving a better understanding of the physiology of farm animals. But it is a continuum, and even at those institutes whose objectives are most immediately realizable, some strategic research is also done. There are often joint projects that link the poles, and I understand that at the Letcombe Laboratory, one of those placed by Lord Rothschild in the same category as Babraham, there is extensive collaboration, very much at the applied level, with members of the staff of the Agricultural Development and Advisory Service of MAFF. A recent analysis of the overall deployment of the ARC's resources has shown that the percentages of its funds devoted respectively to short-term applied research, long-term strategic research on specifically agricultural processes, and fundamental research, are roughly 20, 60, 20. These proportions are the result of past decisions on research priorities, and I would certainly not regard them as sacrosanct, nor would I claim to possess a magic formula for determining precisely what they should be. But I am confident that they are more nearly correct than those indicated by Lord Rothschild's perfunctory classification of the ARC's activities. Moreover, the arguments about the indivisibility of short and long-term investigations, put forward by Professor Riley for plant breeding, apply with equal force to animal husbandry, and indeed to the whole spectrum of the research undertaken by the ARC.

The question fundamentally at issue is therefore how strategic research on food and agriculture is to be controlled so that the country gets the best value for its money. From the discussions of the past few weeks it is evident that many industrial research directors consider that the customer-contractor principle is difficult to apply in its purest form even for development programmes with well defined objectives. Those planning agricultural research face a highly complex situation. Not only must the customer represent three quite distinct and sometimes conflicting interests—the agricultural industry, the consumer of agricultural produce, and

the community at large—but cost-benefit analysis is often not directly applicable, and social benefits that are impossible to cost enter into the equation. Is a MAFF official, whose chief aim is to increase the economic efficiency of an agricultural process, the right person to decide on the degree of environmental pollution or ecological disturbance that can be tolerated as an accompaniment? And how does one decide exactly how much to spend on research on animal welfare, such as investigation of the behaviour of farm animals subjected to intensive husbandry conditions? Again a strictly cash-conscious customer is not the right arbiter. If, then, the customer-contractor principle is hard to put into effect for short-term applied research and development in agriculture, it will be doubly so for long-term strategic research.

Lord Rothschild has recently said (see *The Times*, January 19) that "There is nothing to prevent a government department commissioning relevant basic or strategic research within an applied research and development programme". As has been pointed out in *Nature*, this may indeed be claimed at the present juncture by departments interested more in empire building than in exercising their proposed new responsibilities efficiently on the lines laid down in the green paper. But the whole tenor of Lord Rothschild's arguments is surely against the appropriateness of customer control for strategic research.

A central and certainly essential feature of Lord Rothschild's recommendations is that in order to be capable of acting intelligently as customers, departments must first acquire a chief scientist and supporting staff; and as he emphasizes, MAFF only has such an organization in an embryonic form. It will take an appreciable time for it to be brought fully into operation, and to gain the confidence of the farmers on the one hand and the research workers on the other. Research budgets have to be planned well ahead. I find it hard to see how Lord Rothschild's own conditions for imposing the new regime can possibly be met as quickly as he proposes. The task of incorporating MAFF's contracts into the ARC's research programme, even on a rational and acceptable scale, will be a complicated one. I suggest that the new financial arrangements should be introduced on a gradual basis over several years, by mutual agreement between the ARC, MAFF and all the other interested parties.