

MINISTRY OF AGRICULTURE, FISHERIES AND FOOD
WHITEHALL PLACE, LONDON SW1A 2HH



From the Minister

PRIME MINISTER

Prime Minister (4)

Dr Nicholson thinks this is satisfactory, though it has been long delayed.

Content, subject to colleagues, for the response to be published?

JMB
14/5

RESPONSE TO THE ACARD REPORT ON "THE FOOD INDUSTRY AND TECHNOLOGY"

The Advisory Council for Applied Research and Development (ACARD) completed in September 1982 and subsequently published a report on "The Food Industry and Technology". The Government response to this report was delayed because of the need to respond to the report of the House of Commons Agriculture Committee on the "Organisation and Financing of Agricultural Research and Development", which in fact covered Food R and D policy as well.

The Government response to the House of Commons Agriculture Committee was published on 21 March 1984, and I now attach for -- your approval the draft response to the report from ACARD. Although the response has taken rather a long time for the reason which I mention, we have in fact accepted most of the report's main recommendations; the response is a positive one which should be helpful both to the future efficiency and productivity of the food industry and to the UK consumer.

Copies of this minute and of the draft response go to Keith Joseph, Norman Tebbit, Nigel Lawson, Norman Fowler, George Younger and to Sir Robert Armstrong and Dr Robin Nicholson.

MICHAEL JOPLING

8 May 1984



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10 DOWNING STREET

From the Private Secretary

21 May 1984

Response to the ACARD Report on
"The Food Industry and Technology"

The Prime Minister was grateful for your Minister's minute of 8 May, to which was attached a draft of the Government's response to the Report from ACARD on "The Food Industry and Technology".

Subject to any comments from colleagues, the Prime Minister approves the draft response.

I am copying this letter to Elizabeth Hodgkinson (Department of Education and Science), Callum McCarthy (Department of Trade & Industry), David Peretz (HM Treasury), Steve Godber (DHSS), John Graham (Scottish Office), Richard Hatfield (Cabinet Office) and Dr. Nicholson.

(David Barclay)

Ivor Llewelyn, Esq.,
Ministry of Agriculture, Fisheries and Food.

NIR



CCNO

DEPARTMENT OF EDUCATION AND SCIENCE

ELIZABETH HOUSE, YORK ROAD, LONDON SE1 7PH

TELEPHONE 01-928 9222

FROM THE SECRETARY OF STATE

Dms
1/6

The Rt Hon Michael Jopling
Minister of Agriculture, Fisheries and Food
Whitehall Place
London SW1 2HH

31 May 1984

Dear Michael,

Thank you for copying to me your letter of 8 May to the Prime Minister covering the draft Government response to the ACARD Report on 'The Food Industry & Technology'.

I am content with the draft and I understand that, subject to any other comments you may receive, you will be writing to the Chairman of ACARD in due course.

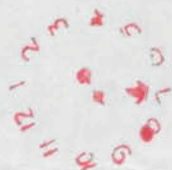
I am copying this letter to all those who received yours.

Ever,

Keith.

AGRICULTURE : ACARD on food Ind + Tech : July 82

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MR BARCLAY, No 10

11 May 1984

GOVERNMENT RESPONSE TO THE ACARD REPORT "THE FOOD INDUSTRY AND TECHNOLOGY"

1. You sent me a copy of correspondence from the Minister of Agriculture, Fisheries and Food to the Prime Minister seeking approval for the Government response to the Report on "The Food Industry and Technology" by the Advisory Council for Applied Research and Development (ACARD).
2. This response has a long and chequered history, the background to which is set down briefly again here. The ACARD report was published in October 1982 and the Ministry of Agriculture, Fisheries and Food (MAFF) was designated the lead Department in formulating the Government response to the Report. MAFF had indicated the intention to reply formally to ACARD by June 1983. In the event, two developments occurred which prompted MAFF to write to the Chairman of ACARD explaining that the reply would be delayed because of the change in circumstances. One was the publication in May 1983 of a report by the Joint Consultative Organisation for Research and Development in Agriculture and Food which made a number of new recommendations about the organisation of Government sponsored R & D in food and agriculture. The other was the anticipated publication (in June 1983) of the House of Commons Agriculture Committee Report entitled "Organisation and Financing of Agricultural Research and Development". It was felt by MAFF that the two new reports could affect the Governments response to the ACARD Report.
3. *March* The Government response to the House of Commons Agriculture Committee Report was published on 21 ~~May~~ 1984 in a written reply to a PQ addressed to the Minister of Agriculture, Fisheries and Food. A reply by the Agriculture Committee to the Government response was published on 2 May 1984. In the reply, disquiet was expressed at the length of time which the Ministry took in responding. Concern was also expressed that the Government had not accepted one or two major recommendations and some further suggestions were made. In view of the Committee's comments about the delay in responding, a quick reply from Government to these suggestions would be expected. ACARD has also been uneasy about the length of time which Government takes in replying to the Councils reports and discussed the matter recently.
4. These new developments should not, in my view, be allowed to delay further the Government response to the ACARD Report; the difficulties over the House of Commons Agriculture Committee Report are largely concerned with agriculture. Although the Government response to ACARD is not absolutely whole-hearted, most of the major recommendations have been accepted and action taken. For example, real resources are being moved from agricultural research to food research. A newly titled Agricultural and Food Research Council has been reorganised internally in order to give higher priority to funding of food research. A major problem still exists over the management of food R & D, but agriculture R & D has the same problems, and this is an issue which the House of Commons Agriculture Committee is seeking to pursue further with Government.

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5. In conclusion, this is a satisfactory response to the ACARD Report and any further delay by Government could not be justified. In my view, the Prime Minister would wish to approve the response and suggest to the Minister of Agriculture, Fisheries and Food that it is published as soon as possible. I understand that MAFF are uncertain about the form of publication, and on this we could advise. It would be courteous, if the Minister wrote to the Chairman when the response is published.

MBN

R B NICHOLSON

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AGRICULTURE, ACARD Penn on Ho
Food Ind. July 82

GOVERNMENT RESPONSE TO THE ACARD REPORT ON "THE FOOD INDUSTRY AND TECHNOLOGY"

INTRODUCTION

1. The Advisory Council for Applied Research and Development (ACARD) completed in September 1982 and subsequently published a Report on the Food Industry and Technology. In July 1982 the House of Commons Agriculture Committee decided to enquire into the organisation and financing of agricultural research and development. Its inquiry included food research. The Committee concluded its work in May 1983 and its report was published the following month. The Agriculture Committee's enquiry covered a number of issues dealt with in the ACARD Report and the Government decided that it could not respond to the ACARD Report independently of its response to the report of the Committee. The Government's response to the Committee was published on 21st March 1984. Reference is made to it in the present paper which gives the Government's response to the ACARD Report.

2. The ACARD Report's conclusions and recommendations fall into four main groups; these are summarised and considered in turn below.

I. A STRATEGY FOR FOOD

3. In brief, the Council start from the position that the food industry is and should continue to be regarded as strategically important to the UK economy. The Council recognises the changing pattern of consumer tastes and the broadening and development of the technological possibilities which together have increased and will continue to increase the importance of processed foods in the diet and in international trade.

4. The Government share these views.

5. The Council goes on to argue that there is already evidence of increasing competition from the food industries of other countries in the European Community and that this competition in respect of the UK and other food markets is likely to increase. But as a report of the Food and Drink Manufacturing Economic Development Committee (EDC)* has shown, overall (ie total factor) productivity in the UK industry

* entitled "Improving Productivity in the Food and Drink Manufacturing Industry: The Case for a Joint Approach".

is significantly lower than in major competing countries and is also increasing more slowly. At the same time, the Council finds "clear evidence of an overall reduction in both R and D expenditure and staff numbers engaged in R and D activities [within the UK food industry] since 1970 of between 15 and 20 per cent. Even more worrying was the considerable staff reduction in R and D which had occurred in several companies during the last two years". The Council goes on to emphasise the importance of improving productivity, innovation and marketing.

6. Again the Government agree with the broad lines of this analysis. The Government contributed to the EDC Report on Productivity and subscribed to its conclusions. It should be recognised that productivity in the UK food manufacturing industry, particularly in terms of value added per head, has increased since that Report was prepared, but it seems probable that the fundamental discrepancy with our main competitors remains. The EDC concluded that a major factor in the lower productivity in the UK was the much lower level of capital investment here than in most competing countries.

7. So far as the level of research expenditure by the UK food industry is concerned, the Government have no reason to dispute the Council's general conclusion, although comprehensive information on the level of industry research expenditure is not available. Although, as will be described below, the Government have in the last few years substantially increased expenditure on research and development for food, it seems likely that this increase has been more than offset by the reduction in research undertaken by industry; nor would the research projects commissioned by the Government necessarily be concerned with similar subject areas. The Government therefore share the concern of the Council and agree that action is needed to maintain the competitive position of the UK food manufacturing industry in the long term.

8. The Agriculture Committee attached importance to food research and supported the ACARD report recommendation for a Food Directorate within a retitled Agriculture and Food Research Council. That recommendation is dealt with in paragraph 40 below. The Committee also recommended that public sector support should be confined to underpinning or fundamental work in food science and that considerably more effort into product-oriented R and D needs to be made by the private sector. The question of publicly funded R and D is dealt with in section II of this paper concerning Management of Government R and D on Food (para 20 onwards).

9. The need for more effort by the private sector was stressed also by the Council, which concluded, first, that the industry should itself take action to reverse the

reduction in food R and D expenditure which has taken place over the last decade; secondly, that to make that research more purposeful the Food and Drink Manufacturing EDC and the Food and Drink Machinery Sector Working Party (SWP) should develop a strategy for the food industry which recognises the role that new and existing technology could play in improving the industry's performance and putting it in a better position to exploit new markets.

10. The Government fully recognise that the major responsibility for conducting food R and D must continue to lie with the industry itself and that the continuation of R and D to improve productivity and innovation is so essential to the industry's well-being that the industry simply cannot afford to economise on the R and D effort. But it is also desirable to look more closely at the causes of the reduction in R and D expenditure that has occurred.

11. The EDC concluded that the low level of productivity was linked to low levels of investment; and that this in turn reflected the expectation of insufficient return on capital. Profitability in the industry has for many years been low in relation to the cost of capital. In the view of the EDC, this reflects the industry's low margins, which have been kept down by intense competition and by the power of the large multiple retailers. Similar considerations would seem to apply to other forms of expenditure which are optional in the short term, including investment in research and development, and the Council shares this view.

12. The EDC Report on Productivity recognised the vicious circle created by low productivity due in part to low capital investment resulting from low returns on capital which are linked to low productivity. They recommended that this circle be broken by a new joint approach by management and employees based on full, effective continuous employee involvement and a joint understanding and approach to productivity improvement. The Government strongly endorse this view, welcome the studies on employee involvement which the EDC are undertaking to follow up their Report and urge every food and drink manufacturing company to adopt the EDC's recommendations as fully and effectively as possible.

13. The question remains whether the present and prospective balance of negotiating power between manufacturers and major retailers is causing, or likely to cause, margins to reduce to a level which poses a long term threat to the viability of the UK food manufacturing industry. The practice of differential discounts unrelated to costs, which is said to be at the root of the problem, was examined by the Monopolies and Mergers Commission whose Report on Discounts to Retailers (published in May 1981)

concluded that the practice was not generally against the public interest. The Commission found that its effects on investment and R and D were uncertain: few companies that gave evidence to them said that investment had been discouraged or that expenditure on R and D had been reduced. Nevertheless the Council's more recent Report saw a real risk that the pressure of major retailers combined with the development of "own label" brands would lead to a squeeze on the finances of the manufacturing industry "to the extent that investment in productivity improvements and R and D expenditure suffer, thereby affecting the industry's innovative capacity in both home and export markets". In the light of renewed representations on this issue from food manufacturers and others concerned, the Director-General of Fair Trading is currently considering whether further studies and enquiries should be undertaken, to supplement and update the investigations previously carried out by the Monopolies and Mergers Commission, in order to establish whether there is sufficient evidence to justify the fears which have been expressed.

14. Whatever the outcome of such enquiries, there is no doubt that in the interests of its own long term survival the industry needs to increase its investment, particularly in the application of new technologies, even if this means that companies may need to lower their expectations, at least for the short term, about levels of return on capital. Moreover, the clear signs of improvement in the national economy should offer a more encouraging climate for investment.

15. Since the Council made their recommendation that the EDC and SWP should develop a strategy for food, the Food and Drink Manufacturing EDC has published a detailed Review of the industry which covers much of the ground described. In the strategy which it developed the Review identified three major tasks for the industry to pursue:

- i. to strive for a greater share of home and export markets to secure additional growth opportunities;
- ii. to invest and take advantage of new technological developments, (the point which is central to the Council's recommendation); and
- iii. to achieve greater efficiency in competitiveness by means of improved productivity.

16. The Government and the EDC both see Food From Britain as the primary means of improving the industry's performance on home and export markets. Both have urged the

industry to give Food From Britain its full support and the EDC have established close links with it through the appointment of the Chairman of Food From Britain as a member of the EDC. Paragraphs 44-48 below described the action which the EDC and the Government are taking to improve the uptake of technology.

17. The Council also recommends that the Department of Industry should stimulate innovation in the food machinery sector, perhaps in the first instance by publicising its existing process industry support schemes more widely, and that consideration should be given to a nationally recognised certification or approval scheme to help exports of food machinery.

18. The Government acknowledges the importance of innovation in food machinery and has supported and is continuing to support machinery manufacturers' development of new products and control equipment through schemes such as Support for Innovation and the Microelectronics Application Project (MAP). In addition the Government is actively participating in the work of the Food, Drink and Packaging Machinery EDC to develop an improved product strategy, and building on the work resulting from the Maker/User programme. At the basic research level, the Agricultural and Food Research Council (AFRC) is also expanding work on the scientific and engineering principles of food processing, and considering how research on different aspects of food process engineering can be expedited.

19. As for the suggested certification or approval scheme, the Government have now formulated proposals for the functions and structure of national accreditation arrangements for certification schemes. Details of these proposals will be announced shortly. The Government already encourages the establishment of independent third-party certification schemes, and £ for £ financial assistance towards the initial administrative costs of developing new certification schemes is provided under the Financial Assistance for the Development of Certification Scheme which was launched in May 1983. Assistance will be available to the food machinery manufacturers if appropriate and if they wish to take advantage of it. Details of the Financial Assistance Scheme are available from DTI.

II. MANAGEMENT OF GOVERNMENT R AND D ON FOOD

20. The Council makes a number of criticisms of the scale of Government expenditure on food R and D, its direction and its management. The main points, some made more specifically than others, are now considered.

21. The Council argues that substantially more funds should be made available for food R and D, and specifically more funds should be made available to universities and polytechnics to build up centres of excellence and train sufficient numbers of technical, engineering and research staff for the food industry.

22. The general case for increasing the funds allocated to food R and D is accepted. Indeed Government expenditure on food R and D has been increasing for some time:-

	£m				
	<u>1978/79</u>	<u>1979/80</u>	<u>1980/81</u>	<u>1981/82</u>	<u>1982/83</u>
Government expenditure on food R and D	5.8	7.7	9.7	13.5	16.0
Index at constant values (1978/79 = 100)	100	115	122	155	172

The Government accepts that greater priority should be given within total expenditure, to food R and D. The planned Government expenditure on food R and D is:

£m	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>	<u>1986/87</u>
	£17.6m	£19.9m	£22.6m	£25.5m

23. It should be reiterated, however, that the increase achieved and the further increases planned in publicly-funded food R and D cannot and should not relieve the food manufacturing and food machinery manufacturing industries from the responsibility of themselves undertaking significantly more research to safeguard their future competitive position, even if this involves lower profit-taking in the short term. Present expenditure is estimated to be of the order of £80 million a year and industry funding is likely to continue to be the principal source of finance for food R and D.

24. The AFRC's first Corporate Plan, published in December 1983, notes that the Council intends to increase its provision for research grants (in universities and colleges) and to extend the already considerable links between institute and university workers. The proposed expenditure on research grants in food science is:

£m	<u>1983/84</u>	<u>1984/85</u>	<u>1985/86</u>	<u>1986/87</u>	<u>1987/88</u>
	0.2	0.6	0.9	1.1	1.3

The Council has published a booklet entitled "ARC funds for Universities" which describes the ways in which support can be given, including the establishment within universities of AFRC Research Groups, and Link Research Groups associated with nearby institutes; and the brochure "Food Research" has recently been published and distributed widely in universities and polytechnics with the aim of encouraging applications for research grants and studentships in food related sciences.

25. Contract work on agriculture and food placed by the Ministry of Agriculture, Fisheries and Food (MAFF) with universities has increased in the last three years from £287,000 in 1980/81 to £1,313,000 in 1982/83. In addition the MAFF will be providing funds, commencing at £1m in 1985/86 and rising over later years to £5m, to commission agriculture and food work from the range of potential contractors. Although no part of this fund will be reserved for universities it is expected that they will win a substantial number of the contracts. The MAFF is to implement also a Co-operative Awards in Science and Engineering (CASE awards) scheme, as part of its existing agriculture and food Postgraduate Studentships Scheme, with effect from the 1985 awards.

26. Whilst the Government plans to increase its support for work at universities, it agrees with the Agriculture Committee that the universities themselves must continue to seek outside sources of research funding and maintain their contacts with the private sector. The AFRC's Food Division will be concerned amongst other things with research training for food scientists and with enhancing the quality and standing of research and research training on the food area. The AFRC has taken over from the Science and Engineering Research Council (SERC) responsibility for support of postgraduate food research training in universities, including CASE awards.

27. The Council goes on to advocate a closer linkage of research to national objectives, the focusing of customer responsibilities into fewer bodies and the allocation of less priority to safety and more to underpinning and strengthening innovation related to productivity, efficiency and presentation of food quality (although the council does also argue (in paragraphs 5.14 and 6.02) for more research effort to sponsor the development of improved methods of testing the safety of food ingredients).

28. These criticisms and comments are dispersed to some extent in the Report but they seem to comprise two main strands - first, that research needs to be purposeful, better co-ordinated and more closely linked to the objectives described in paragraph 3.3 of the Report, and secondly, that the balance of work as between those objectives needs to be revised.

29. On the first aspect, there may be some misunderstanding in the Report of the way in which the present system works. The bulk of the commissioned work is commissioned by a small unit in MAFF which itself developed the strategy represented by the objectives quoted in paragraph 3.3 of the ACARD report and commissions the research specifically in the light of those objectives. The linkage of this work to the objectives is fairly close and all the commissioned projects are directed to one or another of the objectives. For most of the research MAFF Liaison or Project Officers keep closely in touch with the work and advise on its progress; in addition, for the medically or toxicologically orientated work, Department of Health and Social Security (DHSS) Project Officers are appointed.

30. The research work not commissioned in this way falls into two main groups, both funded by the DES Science Budget:

- (i) the more basic food and nutrition research undertaken by AFRC;
- (ii) the work carried out by the Medical Research Council (MRC) relevant to the safety of food and its nutritive value.

Discussions between scientists in MAFF and DHSS, AFRC and MRC take place regularly through formal and informal channels. There is therefore good co-ordination in all aspects of publicly funded food research and no evidence of duplication of any significance. It must, however, be recognised that there are equally in respect of these two work areas very strong links with, and need for liaison on, agricultural matters in the case of the AFRC, and other health matters in the case of the DHSS, where the interactions are also especially beneficial. In other words, they are relevant to the responsibilities of the Departments concerned. Food is not the only, or in some cases even necessarily the main, purpose of some of these projects.

31. The Government acknowledges the importance of clear, broad objectives to which R and D programmes can be directed and against which they can be monitored. As described in the above paragraphs, there is effective machinery in the Ministry and the AFRC for achieving this. There is however also the need to achieve it in the

wider context. The Government has announced that it proposes to simplify the existing administrative structure by abolishing the JCO Consultative Board and the Sponsors' Group (on which are represented MAFF, AFRC, DAFS and the Welsh Office Agricultural Department) and establish a new Priorities Board to co-ordinate publicly funded agriculture and food R and D into a coherent programme relating to defined objectives.

32. The arguments about balance are more difficult to judge. It is correct that significant resources are allocated to food safety and quality matters. (The question whether this work is cost-effective is dealt with in the Annex.) But in allocating funds between these objectives on the one hand and the promotion of the productivity and efficiency of the industry on the other, the Government have to have in mind that while private industry is prepared to finance research into the latter it is not generally speaking prepared to allocate resources to the former except insofar as this is necessary to forward its own products. It therefore falls to the Government to fund much food safety work that is important to the welfare of consumers generally and this work must be given the necessary priority. Nor is this work unimportant to the industry, as the conflicting comments in paragraphs 5.14 and 6.02 of the Council's report quoted above show.

33. The Council recommends that the new Joint Consultative Organisation (JCO) should be given a stronger proxy customer role along the lines of the DTI Requirements Boards.

34. In making this recommendation, the Council may be unaware of the precise nature of the existing arrangements. The Report states "A small number of ad hoc Committees, set up for a limited period, advise (the JCO) on specific topics". It should be made clear that the approach is far more systematic than this statement implies. These Committees are scheduled to cover the whole research area in a four-year cycle and aspects of each area is tackled in depth.

35. In support of its recommendation, the Council advances three arguments, ie that

- (a) although formally the Requirements Boards advise the Secretary of State, by custom and practice their advice is almost always taken;
- (b) membership is drawn mostly from relevant industries, with minority participation by departmental officials and representatives from research establishments;

(c) the chairmen are usually independent of the Government.

But all of these arguments are also true of the JCO Food Committees. Almost all the recommendations of the Committees which have so far reported have been accepted. Their membership almost exactly mirrors the composition of the Requirements Boards. The Committee Chairmen have been drawn from the industry (though not necessarily from the sectors being studied).

36. There is one important difference. The Requirements Boards are established on a continuous basis, (although Board members are appointed for limited periods) whilst the JCO Food Committees are ad hoc. This is a new development for the Food Committees (as for the other JCO Committees) - a change deliberately made. Experience of continuing committees in this area has suggested that it is extremely difficult for leading scientists and managers in this industry to maintain a very high level of attendance and attention over a sustained period. They have welcomed the ad hoc approach which permits them to make a major effort over a limited period, with timetabled targets, to carry out a really penetrating study of each subject area once in four years. The experience so far is that this approach has produced reports of high quality on both food and agricultural subjects, as has been recognised by both Government and industry.

37. The Priorities Board which the Government has decided to establish (para 31 above) will advise the Agriculture Departments and the AFRC on scientific priorities in agriculture and food R and D and on the allocation of research budgets. This is being established on a continuous basis and again its advice will normally be taken. This will achieve a more strategic and co-ordinated approach to publicly funded agriculture and food R and D in the United Kingdom.

38. The Council recommends that appropriate links should be established between the MAFF, the DHSS and DTI, perhaps through cross-membership of JCO Committees and Requirements Boards.

39. There is already close co-operation between these Departments and cross-membership of Committees and Boards will be arranged in appropriate cases.

40. The Council recommends that the Agricultural Research Council, together with the Advisory Board for the Research Councils (ABRC), should pursue the proposal for a Food Directorate within a retitled Agriculture and Food Research Council for the stimulation of training and the funding of research in universities and Research

Council Institutes into food related topics, including nutrition and food processing and machinery.

41. The Government welcome these recommendations. The former ARC has changed its name to the Agricultural and Food Research Council to reflect the higher priority it is giving to food research. The Council has established a Food Research Committee (including Council members, institute directors, independent scientists, representatives of the food industry and of Agricultural Departments). The Council has also formed a new Food Division in its headquarters organisation. The Food Research Committee has identified new areas which merit more basic research and the MAFF has increased and will increase further its programme of work commissioned with the Council.

III. TECHNOLOGY TRANSFER

42. The Council recommends that MAFF should ensure that the food-based research associations and other comparable bodies are effective in transferring technology into the food industry. The Council also recommends that the Food and Drink Manufacturing EDC and the Food and Drink Machinery SWP should consider how the food industry can be made more receptive to existing or new technology.

43. The Government fully recognise the importance of improving technology transfer in the food industry. The Council's Report records the considerable advances already brought about by the food processing industry. Many companies have shown a willingness and ability to adapt and keep ahead of the field. On the other hand there have been a number of failures to apply new technology which has become available. As the Report recognises, there are technical, economic and market constraints on the uptake of new technology, including the problem previously discussed of the expected return on capital. This is a field which merits further investigation. The Ministry of Agriculture, Fisheries and Food have therefore commissioned jointly with the SERC and the AFRC a research project with the Technical Change Centre to examine the factors affecting the rate of uptake of new technology within the food industry. This project is looking at examples of research innovations which have been taken up industrially and also, perhaps more importantly, is seeking to establish why certain innovations have not been taken up.

44. At the same time the EDC has set up a Technology Sub Group to examine how uptake of new technology by the industry might be encouraged and improved and to consider related issues including manpower and training. The Sub Group is establishing close

links with the Food and Drink Machinery SWP in order to ensure close maker/user collaboration in the application of new technology. The Government is participating fully in the work of the Sub Group and co-ordinating closely with it their research on the rate of uptake of new technology.

45. The Council draws a comparison between the rate of new technology uptake in the agricultural and food industries, but the Council recognises that the circumstances of the two industries are different in significant respects. There is no equivalent in the food industry to the relatively easy method of technology transfer which exists in agriculture through the substitution of new and improved seeds, pesticides and other agricultural requisites for old, a method of passing on the results of the geneticists and chemists which requires no special effort from the farmer. In addition, no country-wide state advisory service analogous to the Agricultural Development and Advisory Service exists for food and, as the Council recognises, such a service for food would be neither appropriate to the structure of the food industry nor justifiable in cost-benefit terms.

46. The food industry consists of a large number of firms of widely differing size utilising a wide variety of technologies. The larger firms often have major scientific and engineering capabilities and in many cases themselves make the technological advances, which are subsequently taken up by medium-sized and small firms.

47. The main channel for technology transfer for small companies has been the food-based research associations. These are supported by a substantial part of the industry and provide a nucleus of knowledge and an important source of advice to their members on the opportunities afforded by modern technology. MAFF commissions a substantial amount of work with the associations and in future intends to place greater emphasis on the practical application of the results to industry. Consideration will also be given to methods of encouraging the associations to broaden the base of their work, in order to encompass such activities as management advice, as suggested by the Council.

48. To sum up, work has been commissioned at the Technical Change Centre on the extent to which technology is transferred within the industry and the pathways by which it occurs. The Government also welcome the decision by the Food and Drink Manufacturing EDC to set up a small group to examine how the food industry could become more receptive to changes in technology and to seek ways to improve the present situation. A major effort will be made to encourage the research associations to give

greater attention to the uptake of new technology. The Government are also augmenting the help available to the food manufacturing industry through the Support for Innovation programme and the Manufacturing Advisory Service. MAS has assisted more than 250 firms in the food manufacturing industry since April 1982, when they were first eligible for the scheme. For smaller firms who are not eligible for MAS the Technical Enquiry Service (SFTES) was set up in July 1982: it has assisted over 50 firms in the food manufacturing industry.

IV. NUTRITION

49. The Council argues that in view of the public interest in nutrition and the food industries' need to respond to their requirements, there is a need for more nutritional research with greater central direction. It also perceived the need for more comprehensive statistical information on food consumption and a national nutritional survey and suggested that ways should be sought to obtain additional industrial funds for this work.

50. The responsibility in Government for the health and nutritional status of the population lies with the DHSS, while that for ensuring the nutritional adequacy of the nation's food supply lies with MAFF. MRC and AFRC spend a significant amount on research in this area, supporting work in their own institutes and elsewhere on the basic science underlying nutrition, and there are special links between the two Councils. DHSS and MAFF also sponsor surveys and supporting R & D with a variety of organisations, including the Research Councils, to identify nutritional priorities and provide improved understanding of nutrition. All this work takes cognisance of research being carried out in many other countries. The Government recognise that co-ordination between the DHSS and the MRC and the expanding work being done on the nutritional aspects of food by the MAFF and AFRC is important and they will continue to encourage this. They will also seek to improve the identification of national priorities for the overall programme on nutrition.

51. MAFF sponsors the National Food Survey (NFS) which regularly provides estimates of household food purchases based on a statistically representative sample. The Government recognise that as a "nutrition" survey the NFS has a number of limitations. However, the Government believe that any attempts to extend the coverage as the Council has suggested would almost certainly lead to a decline in the response rate and thus be counter-productive. Furthermore, valuable though an extension to embrace a full nutritional survey might be, it would be prohibitively expensive to mount such an enquiry on a national scale. At present the data provided by the NFS are

supplemented by a number of special investigations carried out by DHSS on potentially "at risk" groups. The Government believe this is the most efficient and cost-effective method of assessing the nutritional problems of the nation.

52. The Council also argues that greater effort should be put into educating the public on food matters. The Government accept that the public should receive accurate information on the association between nutrition and health, so that informed choices can be made from the wide variety of foods available in the UK. DHSS through its support for the Health Education Council and through its own specialist reports on aspects of public nutrition has a major programme in this area. Reports such as "Eating for Health" and the MAFF Publication "Manual of Nutrition" provide a great deal of simple practical advice on healthy eating. The DHSS Committee on Medical Aspects of Food Policy provides advice to Ministers on all relevant topics, including nutrition in relation to coronary heart disease, infant feeding, recommended daily amounts of food energy and nutrients for groups of people in the United Kingdom and the fortification of the national diet. In the light of the current public interest in nutrition the Government will make a special effort in collaboration with the food industry to seek practical ways of increasing nutritional information in a form which can be readily understood.

CONCLUSION

53. The Government welcome the Council's Report as a timely and useful assessment of the position on technology and innovation in the food industry. The main features of the Council's analysis are accepted. Many, though not all, of the recommendations are also accepted and a programme of action is outlined. The Government are grateful to the Working Group and to the Council for this Report.

FOOD SAFETY AND HEALTH

1. In the course of the Report, the Council suggests that too much attention is currently being given to routine safety testing of chemicals in food. They suggest that more attention should now be given to developing cost effective safety testing procedures based on a more fundamental understanding of the biological effects of chemicals at levels likely to be encountered and that greater effort should be given to educating the public on nutritional imbalances and other food hazards in the home.

2. The Government have a responsibility for ensuring that the food supply is safe, varied and nutritionally adequate. Advice on safety matters is provided by a series of specialist committees, including the Food Advisory Committee and the Committees on Toxicity, Carcinogenicity, Mutagenicity and Novel and Irradiated Foods, which are composed of distinguished independent medical and non-medical scientists. They are aware of the need for improved approaches to safety testing and have wherever appropriate assessed and incorporated new methodologies for toxicological evaluation into their repertoires. Both MAFF and DHSS support work in various Institutes designed to improve the fundamental understanding of the biological action of chemicals and to produce better and cheaper testing methods. However, before they can be used for hazard assessment any new methods must be fully validated, both nationally and internationally. It is important to achieve harmonised international attitudes to toxicity testing requirements to prevent unnecessary duplication of testing and to avoid the erection of non-tariff barriers to trade. The DHSS is greatly involved in discussions at international levels on toxicological matters, with a view to achieving internationally recognised testing protocols. The Committees on Toxicity, Carcinogenicity and Mutagenicity have recently produced new guidelines which emphasise a flexible approach to safety assessment and which incorporate the latest fully validated testing procedures. However, it must be recognised that flexibility places a considerable responsibility upon the manufacturer wishing to market new chemicals or new foods to think carefully about toxicity testing and not to adopt a check list procedure.

3. The Government accept that certain naturally-occurring food substances may under certain circumstances constitute a hazard to human health. The MAFF Steering Group on Food Surveillance, which provides data and advice on the occurrence of contaminants in food, has recently set up a Working Party on naturally-occurring toxicants to investigate the extent of this problem. Its reports will be considered by the appropriate DHSS Committees. The Government also recognise that nutritional imbalance and food-borne pathogens constitute at least as large a risk to public health as

additives and contaminants in food and in addition to the steps being taken to improve nutritional awareness described earlier, they will also seek to lower the level of pathogens in food by appropriate measures and to improve food hygiene education among consumers and food handlers through the Health Education Council.