In Europe at present there is unprecedented interest in diet and health. This ranges from the concern of individual consumers in relation to healthy eating to that of government ministers who are faced with the enormous cost of health care and who are increasingly realising that the answer may be in preventive medicine.

In Europe, the prominent position of the common agricultural policy (CAP) has resulted in a major policy input at the production-agriculture level; however, few if any corresponding policies have been applied to the downstream food areas and this represents a major deficiency in the European food system. The present study, which took a year to complete, is therefore both timely and topical. It is based on major reviews of the scientific, trade and popular literature, together with the distilled views of international experts who were contacted personally or who took part in a 'project-steering' workshop held in Dublin in March 1985. The collective findings/ recommendations are summarised below.

Concerns of consumers
The findings are presented in an overall European context but most, if not all, are directly or indirectly applicable to Ireland.

Food, health and consumer issues will continue to be a major challenge to all in the food production and food processing areas and also to policy-
COMPONENTS

The project had three components:
1. A critical review and assessment of key nutritional issues and of the criteria applied for determining the effects of foods of plant, animal and marine origin on human health.
2. An assessment of food and nutrition policies in developed countries.
3. An evaluation and assessment of agricultural production and food processing technologies with respect to their impact on human health, and consumer reaction to them.

The consumer lobby in relation to food and health will grow in strength in Europe and will exert greater pressure on the food system. Therefore, a Community-wide opinion poll, linked to structured debate, should be conducted to define precisely the concerns of European consumers in relation to diet and health.

It must be recognised that the CAP has dominated food production in Europe for some years and the development of a 'balancing' integrated European policy which will be concerned with the quality and safety of the food supply in human nutrition terms is highly desirable. Towards this end, the inauguration of an elite committee (at Director or Deputy Director level) across Directorates General in the Commission of the European Communities (CEC) with responsibility for food, health and consumer issues is recommended.

Current human nutrition thinking
Health is influenced by lifestyle, environment and genetic factors and diet is often singled out unfairly as the major cause of many health problems. However, it must be put in context as it is only a component of lifestyle and an even smaller one of environment. Genetic factors may be quite important in predisposing humans to disease and an EEC-wide family medical history study is proposed with the express aim of obtaining greater information on the causes of morbidity and mortality within and between families. There is still disagreement, controversy, and even confusion, among experts concerning some of the key nutrition issues of today—for example, recommended daily allowances for some nutrients, the cholesterol, fat and salt issues, the role of trace elements, the effects of mild overweight, the effects of dietary fibre. The CEC should, therefore, promote the formation of interdisciplinary groups together with informed public debate in order to reach a greater consensus on some of these issues.

Obviously current nutrition thinking is largely influenced by results of nutrition and nutrition-related research and by the deliberations and recommendations of expert groups. However, there may be some pitfalls in both of these (see box page 134) and care must be taken to avoid them.

Specific nutrients and related areas
Recent evidence that fish oils, certain vegetables and vitamins (C and E) may influence coronary heart disease warrants continuing in-depth scientific investigation. There is also a need for rapid non-invasive techniques for examining the walls of blood vessels in order to enable routine screening programmes to be established. The possible combined effect of sodium and calcium in reducing blood pressure also needs further clarification as does the effect of limiting sodium and calcium (via reduced dairy products) in the diet on this beneficial synergism.

Weight control for health and social reasons is a major aim for many people in developed countries. Continued research is essential on mechanisms of energy use/disposal in man via thermogenesis, exercise, so-called ‘bad converting’, and through other routes, with emphasis on genetic aspects.

Dietary recommendations, food and nutrition policy
The relative merits of promoting a European consensus on dietary recommendations should be explored; if such an EEC-wide approach is believed to have advantages, a carefully composed group representing all Member States and bodies (producers, processors, consumers, medical etc.) should be assembled for a significant time-period before issuing any findings. In the absence of such a step, a number of broad consensus statements (see box page 135) could define nutrition policy.
in member States. These statements are compromised to some extent by the paucity of published information on dietary patterns in most member States. National food surveys are, therefore, desirable in most EEC countries in order to obtain concrete data on food intakes and dietary patterns; the results could serve as an essential base from which more accurate dietary recommendations could be launched.

In relation to some of the statements in the box, it is suggested that the practice of advocating certain dietary regimes for whole populations may be too extreme; those most at risk should be identified by screening procedures programmes should be introduced, coordinated and funded in part by the EEC.

Incentives to dietary change

Bringing about dietary change, consumers have to be convinced that they should change their diet and producers and processors have to be encouraged to produce the required foods at a reasonable price. The report of this project advocates certain measures for this, including:

* Increased EEC support for producers and processors of reduced fat foods and food products.

* Reduction in EEC-funded advertising campaigns for full-fat dairy products, and more emphasis on reduced-fat products.

Consumer lobby in relation to food and health will grow in strength in Europe and will exert greater pressure on the food system.

* Modification of statutory compositional standards for sugar and fat-containing foods in EEC member States.

* A greater ability to predict the response of consumers to differential pricing in closely related products (e.g. full-fat vs reduced-fat milk).

* Consumer subsidies to stimulate poultry, fish and cereal food consumption.

Consumer education in nutrition

Dietary changes in populations are virtually impossible to achieve unless consumers are well educated in food and nutrition. Proposals in this area include:

* Setting up more comprehensive nutrition education programmes in EEC member States.

* Greater understanding between scientists and media personnel in order to ensure the dissemination of accurate nutritional information.

* Setting up a resource service embracing nutritional matters in each member State.

* Reduction in the major difference between the operating budgets of national health education organisations and the advertising expenditure of food companies.

* Greater use of retail outlets as purveyors of unbiased nutrition information. The EEC should also assume more responsibility for providing impartial information to the consumer on potential hazards in foods and should encourage/require bodies representing both agriculture and the food industry to be involved in the informing process.

Agricultural production

Many consumers are concerned with some of the current agricultural practices. More information and research is required, therefore, in order to convince consumers that current practices are indeed safe. While the legal use of agro-chemicals appears to pose few risks for consumers, the regulation of this area within the EEC is in some respects incomplete and somewhat uneven between countries.

It is desirable that a comprehensive harmonised regulatory system be put in place to cover farm use of antibiotics including standards of manufacture, control of distribution and availability, and effective monitoring of residues. In addition the surveillance of use and the monitoring of residues of all agro-chemicals should be extended sufficiently to assure consumers that they are being used safely at farm level. Opportunities for reduced use of agro-chemicals need to be identified further and the use of integrated pest management systems should be encouraged.

Changes in breeds/cultivars used and modification of some husbandry practices could improve the nutritional quality of foods both in the shorter- and longer-term. For example, changes in animal breeds and husbandry practices could lower the fat content of animal products (encouraged through pricing policies under the CAP). Fundamental strategic research could be carried out on the deposition of selected nutrients in key plant and animal species, on cellular mechanisms controlling this deposition, and on the effects of husbandry. This would facilitate more profound changes in nutrient content through breeding and husbandry modification.
The study recommends that more research and regulatory attention be devoted to the possible effects on human health of the low levels of toxins found naturally in some common plant species used as foods. Due to lack of attention to this area in the past the significance of these toxins is largely unknown but the consensus among scientists is that they are underrated as a food hazard. In addition, the regulation of all chemicals in foods (natural, added, contaminating, formed) should be dealt with on an equal basis, distinguishing between large and small risks to consumers.

Food processing

Overall, the losses of nutrients due to most methods of food processing and storage do not appear to represent a nutritional problem for the majority of consumers. In general these losses are not excessive or are compensated for by the greater availability and variety of foods which result from food processing, or by the fortification of some foods such as breakfast cereals. However, it is important that up-to-date nutritional methodology should continue to be applied to the evaluation of the composition and bioavailability of important vitamins and minerals in key foods and in foods resulting from novel food processes. The effects of processing on nutrient loss in foods designed for sub-groups of the population, such as infants, who consume a limited range of foods, could also continue to receive special mention.

Some processed formulated foods, which contain high levels of refined ingredients, fats and sucrose, and low levels of dietary fibre, vitamins and minerals, can contribute to nutritional imbalance. It is important that the Commission encourages industry to develop more 'healthier' formulations of novel products which better meet consumers' dietary needs. This could be done, for example, through support for specific R and D projects in this area. The Commission should also consider funding fundamental research to explore the possibilities for imitating the functional properties of, for example, fats and salt in food systems through the use of other ingredients considered to constitute less nutritional hazard.

In the area of toxicology the evidence from chemical analyses and from decades of human experience indicates that most food processes do not appear to pose toxicological hazards for consumers. However, research attention should continue to be directed towards evaluating the limited number of chemical entities produced during processing which are considered toxic or require further safety assessment. These include products of browning and pyrolysis reactions, lysinoalanine formation due to heating of proteins and trans-fatty acids produced during hydrogenation (hardening) of oils. A protocol should be developed for the evaluation of novel food processes, focusing on important chemical changes in combination with animal testing at moderate levels of ingestion.

The risks to health from food additives appear to be exaggerated by consumers and some press comment. However, more attention should be given to the status of the limited number of food additives which cause allergic reactions or other possible acute effects such as hyperactivity in children. Secondly, the possible long-term effects of additives per se or from possible interactions between additives and other chemicals foreign to the body have not been adequately addressed.

Conclusion

As should be apparent, this study was extremely wide in its scope and timely in its execution. Any meaningful summary of the report of the study would be very difficult but would also defeat its purpose, since the authors view the report as the basis for public and professional debate rather than a blueprint for immediate governmental action. This article, therefore, represents the beginning of the dissemination phase of the study rather than its completion.

Acknowledgements

We thank the Commission of the European Communities (FAST Programme, DG XII) and Mr. M. McCluskey of Boyne Valley Food Ltd., Drogheda, Ireland for funding (in-part) this study, and also Mr. B. Wafer and the National Board for Science and Technology for assistance and support with/for the project workshop. Special thanks is due to the very many colleagues, scientists and professionals in Ireland and other countries who helped so willingly with information and advice.