The process of setting micronutrient recommendations: A cross-European comparison of nutrition-related scientific advisory bodies

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<th>Abbreviations</th>
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<tr>
<td>COMA</td>
<td>Committee on Medical Aspects of Food and Nutrition Policy</td>
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<td>CR</td>
<td>Czech Republic</td>
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<td>DACH</td>
<td>Germany, Austria and Switzerland</td>
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<td>DGE</td>
<td>German Nutrition Society</td>
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<td>DRV</td>
<td>DACH Reference Values</td>
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<td>EFSA</td>
<td>European Food Standards Agency</td>
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<td>ERNA</td>
<td>European Responsible Nutrition Alliance</td>
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<td>EU</td>
<td>European Union</td>
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<td>FAO</td>
<td>Food and Agriculture Organization</td>
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<td>FBDG</td>
<td>Food Based Dietary Guidelines</td>
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<td>FSA</td>
<td>Food Standards Agency</td>
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<td>MZ CR</td>
<td>Ministry of Health of the Czech Republic</td>
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<td>NDH</td>
<td>The Norwegian Directorate of Health</td>
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<td>NNC</td>
<td>The National Nutrition Council</td>
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<td>NNR</td>
<td>Nordic Nutrition Recommendations</td>
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<td>NRV</td>
<td>Nutrient Reference Values</td>
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<td>NTD</td>
<td>Neural Tube Defects</td>
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<td>ÖGE</td>
<td>Austrian Nutrition Society</td>
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<td>SAB</td>
<td>Scientific Advisory Body</td>
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Abstract

Objective: To examine the workings of the nutrition-related scientific advisory bodies in Europe, paying particular attention to the internal and external context within which they operate.

Design: Desk-research based on two data-collection strategies: a questionnaire completed by key informants in the field of micronutrient recommendations; a case-study that focused upon mandatory folic acid (FA) fortification.

Setting: Questionnaire-based data was collected across 35 European countries. The folic acid fortification case study was conducted in the UK; Norway; Denmark; Germany; Spain; Czech Republic; Hungary.

Results: Varied bodies are responsible for setting micronutrient recommendations, each with different statutory and legal models of operation. Transparency is highest where there are standing scientific advisory committees (SAC). Where standing SAC are created, the range of expertise and the terms of reference for the SAC are determined by government. Where there is no dedicated SAC, the impetus for the development of micronutrient recommendations and the associated policies comes from interested specialists in the area. This is typically linked with an ad hoc selection of a problem area to consider, lack of openness and transparency of the decisions and overreliance upon international recommendations.

Conclusions: Even when there is a consensus about the science behind micronutrient recommendations, there are a range of other influences that will affect decisions about the policy approaches to nutrition-related public health. This indicates the need to document the evidence that is drawn upon in the decisions about nutrition policy related to micronutrient intake.

Introduction

Currently, most countries in Europe establish their own nutrient recommendations, and there is large heterogeneity in recommendations within Europe\textsuperscript{1-3}. The European Food Safety Authority's (EFSA) is in the process of reviewing and updating the last report on recommended nutrient and energy intakes for the EU population published in 1993 prepared by the Scientific Committee on Food\textsuperscript{4}. Variability is partly due to the use of different
approaches (e.g. health outcomes and methods used when data are missing for subpopulations), changes over time in the approach to establish recommendations and/or data used\textsuperscript{3}, and the uncertain nature of many scientific elements\textsuperscript{5}. The background information provided in the recommendation reports lacks transparency as it is not possible to disentangle the relative contribution of different aspects of evidence. Because of this lack of transparency it is often difficult to track why there is heterogeneity in micronutrient recommendations. This lack of transparency then leads to perceived inconsistency, perceived lack of objectivity, complexity in presentation, lack of clarity, difficulty in implementation, decreased chances of reliability and it hides research gaps\textsuperscript{6,7}.

Variability may also be due to the variable influence of international organisations such as the WHO, FAO or EFSA. Whilst WHO and FAO are mandated by Member States to develop policy and programme guidance on health, food and agriculture related matters, including nutrition recommendations, such guidance is freely accepted by countries. The existing significant scientific activity at the national level (e.g. Nordic countries, UK, DACH) as well as the historical links that exist between some national scientific communities can explain the variability in acceptance of the international micronutrient recommendations.

Scientific advisory bodies (SABs) are groups through which expert advice enters the political process and can be established institutions, short-term commissions, ad hoc and standing committees and informal network of experts\textsuperscript{8}. Their key role is to feed technical recommendations into the policy development process. Evidence suggests that SABs play a crucial role in advising government on development and implementation of nutrition policies: WHO have noted the possible link between the existence of SABs and the degree to which nutrition policies are developed and implemented\textsuperscript{9}. There is however little research that seeks to explain why this might be the case. The way in which nutrition-related SABs operate in Europe, and how they input into public health nutrition policy related to micronutrient recommendations is the focus of the current paper.

\textbf{The changing policy context}

Scientific expertise often underlies evidence-based policy making, as it is used to make decisions more rational, justifiable and effective. It may also facilitate greater public
acceptance, and is thus a valuable tool in policy-makers’ efforts to manage accountability and justify value-based decisions\textsuperscript{9-11}. Recent emphasis on evidence-based policy, the proliferation of governance bodies whose job is to monitor the evidence base (e.g. EFSA) and “knowledge management systems” signal a shift in policy making towards a greater reliance upon scientific expertise\textsuperscript{12}.

Whilst SABs play a crucial role in informing and providing rationale for policy decisions, the recent trajectory of their involvement in government decision-making has been characterised by a shift in their role and relationship with policy decision-makers, from a closed, instrumental approach to policy (i.e. science-driven) to the emphasis on openness (i.e. admission into policy considerations of different forms of evidence, including scientific) and transparency (i.e. more clarity about the way in which decisions have been achieved\textsuperscript{13-15}). Following a series of high-profile failures of scientific advisors and government officials to protect public interest in assessing and managing health and environmental risks (e.g. BSE), the recognition that uncertainty is inherent to scientific judgment and that subjective and objective elements of expert decision-making are difficult to disentangle, there are now public and policy pressures for democratisation of expertise\textsuperscript{13,16,17}. Various policy documents\textsuperscript{12,18,19,20} have indicated a need for greater transparency of the workings of SABs.

In addition to transparency of the decision-making processes of SABs, there is also a call for an increased openness to the inclusion of stakeholder perspectives. Within the EU, there has been a move towards pragmatic management of multiple views and perspectives and co-production of policy decisions, so that they take into account the views of various stakeholders\textsuperscript{18,21} whilst science itself is expected to be increasingly utilitarian in the way research questions are framed and solutions sought, with the expectations of it being informed by and responding to the views of lay citizens and society at large\textsuperscript{9, 22}. As part of the call for democratisation of expertise, recent academic focus has been upon examination of the workings of expert advisory bodies\textsuperscript{9,15,23-25}. The main streams of empirical work around SABs are:

\begin{itemize}
  \item knowledge gathering/formation and expert decisions\textsuperscript{9,24-26} and
  \item knowledge transfer - the way in which expert and policy worlds meet and influence each other\textsuperscript{27,28}.
\end{itemize}
Knowledge gathering and formation

The way expertise is defined and SABs are structured determines how a problem is framed, which in turn influences the decisions around inclusion or exclusion of particular perspectives, and the way facts are selected and interpreted and conclusions drawn\textsuperscript{23,29-31}. The nature and source of expertise may also be a significant factor in whether scientific advice is taken up in the policy-making process\textsuperscript{25}. Traditionally, SAB-related expertise has been defined in terms of an individual expert’s: a) qualifications, knowledge and experience in their chosen field; b) “eminence” or “authority” as a trusted source of science in communication with wider society, and/or c) their institutional affiliation\textsuperscript{24,31,32}.

With the crisis of confidence in science, academic attention has turned towards the nature of decision-making in SABs, including the way in which experts within SABs deal with scientific uncertainties, scientific controversies and pressures for consensus\textsuperscript{15,33} and variety of influences on expert advice\textsuperscript{12}. From a sociological perspective it is recognised that scientific decision-making is deeply intertwined with the context in which it operates\textsuperscript{23,33}. The notion of co-production of knowledge, which is concerned with the way science and society shape each other has been put forward as a useful framework for the study of decision-making in SABs\textsuperscript{34}, leading to the calls for various forms of knowledge (e.g. technical, lay) being granted equality in the formulation and deliberation around scientific issues\textsuperscript{35}. Some of the issues discussed include how to achieve engagement with the public\textsuperscript{35,36}, the notions of “opening up” of expert considerations and the questioning of the boundaries between lay and expert perspectives\textsuperscript{37}. However many authors have recognised the inherent tension between different forms of knowledge within SABs and an unequal balance of power being assigned to representatives of lay and technical knowledge on these committees\textsuperscript{38}.

Applying these ideas to evaluation of the existing SAB, another line of research has examined stages of decision-making and demonstrated how different types of knowledge and expertise input can inform the decisions at each stage\textsuperscript{39-41}. Typical stages include risk assessment; risk management and risk communication\textsuperscript{12,39}. Decision-making, however, is largely confined to experts and professional risk managers, with little input from other interested parties, including citizens\textsuperscript{12}. In recognition of this, there have been attempts to develop a tool to guide policy makers and scientists in making decisions about when
scientific decision-making should be opened-up and when other stakeholders should be involved.42,43

Knowledge transfer
Much literature examines how SABs communicate to policy decision-makers15,23,40,44 and takes into account both the internal context in which decisions are made and the external context which shapes this.40,44 Internal context, which can be changed and controlled from within SABs and by their commissioners, includes the way expertise is defined, how representative SABs are, the degree of openness to stakeholder input in framing, analysing and formulating solutions to an issue, and transparency of the way decisions are made. External context amounts to the environment in which a decision is applied and can not be easily altered or controlled. Crucially, SABs are expected to maintain independence from the bodies they advise, although in practice, this remains a challenge.22 Given SABs’ unique position as intermediaries between science and policy, they have been a fertile ground for the study of the boundary between politics and science, its negotiation and the degree to which the two permeate each other.9,45 Whether scientific advice is salient, credible or legitimate is considered an important determinant of influence.46 However, these criteria of influence as well as SAB decision-making processes and outcomes will be determined by the external context in which SABs operate, and include ideological, socio-political, economic and legal issues.44

The current paper aims to examine the workings of nutrition-related SABs in the process of setting recommendations for folic acid (FA), through comparative analysis of the process of setting micronutrient recommendations across Europe, paying particular attention to the internal and external contexts within which SABs operate.

Methods
Questionnaire
Questionnaires were completed by key informants in 35 European countries/regions. The main objectives across countries were:
To collate all the existing current micronutrient recommendations and describe the process of deriving nutrition recommendations and their use in nutrition policies; and

For each micronutrient, to identify the policies adopted as a result of recommendations.

Data was collected on: *structure of the committee* (e.g. type of expertise, selection criteria); *process of scientific decision making* (for each micronutrient: nature of scientific evidence considered; type of recommendations, health endpoints, population groups, vulnerable groups, how recommendations have informed the development of food-based dietary guidelines (FBDGs)); and *the way in which science resonates with policy* (i.e. policy options recommended by SABs setting NRV and policy applications, i.e. actual policies adopted by governing bodies responsible for these).

### Case study

An in-depth case study was conducted in seven countries varying in length of public health nutrition tradition, level of centralisation and diversity of institutions involved in the governance of nutrition, and extent of participatory democracy: Czech Republic (CR), Denmark, England, Germany, Hungary, Norway and Spain. The main objectives were to

- Understand the process from science to policy, and the determinants of variations in this process across nations/regions, policy applications and micronutrients, with a specific focus on FA; and

- Identify the way in which scientific, policy and consumer issues interact throughout this process

Information was obtained on: a) *the degree of transparency of the decision making and their openness to public scrutiny*; b) *contextual characteristics: the institutional, administrative and political context* (e.g. how food and policy were/are conceptualised; the names of key stakeholders; c) *the generic process of setting up micronutrient recommendations* (e.g. who is in charge, triggers for the development of recommendations, who is invited to take part, what is the type of scientific data considered; the degree of scientific certainty/controversy); and d) *the process from science to policy application* for FA. An assessment was made about the
public availability of literature and documentation on the workings of the institutions
responsible for the development of micronutrient recommendations, public and stakeholder
involvement and nutrition policy processes, indicating the degree to which participatory
democracy has evolved and the level of transparency and openness in the processes of
science and policy in each of the countries in question.

Results

Institutional capacity

The questionnaire data indicate that in approximately half of the countries (18 out of 35), the
final responsibility for setting micronutrient recommendations rests with government
departments (Table 1). Recommendations are supported by one or a combination of scientific
bodies – scientific advisory committees (often called “advisory councils”) or SACs (10),
public health institutes (15), nutrition societies (5). The European Union’s micronutrient
recommendations were set by EFSA and supported by a SAC and the WHO/FAO
recommendations by a European expert consultation.

Where SACs exist, there are either standing committees providing continual advice to
government, or these are formed on an ad-hoc basis. Standing SACs often form sub-
committees or working groups to deal with specific issues of importance, mainly at the
request of government, such as the need to develop recommendations for specific
micronutrients (e.g. iodine) or population groups (e.g. infants).

In some countries, the decisions about recommendations and nutritional matters rest with
established research centres, and sometimes with nutrition societies. Each of the three types
of SABs – SAC (e.g. the UK, Nordic countries), public health institutes (e.g. Spain, CZ,
Hungary) and nutritional societies (e.g. DACH) are entities substantially differing in their
statutory responsibilities and operating within diverse regulatory frameworks (e.g. funding
sources). Members of SAC are appointed by authorities (usually government departments) on
the basis of their individual expertise, eminence or affiliation with an eminent institution,
although potential members often have to apply to be considered for the SAC. Nutrition
societies are membership organisations whereby inclusion is based on self selection and
satisfaction of membership criteria, whilst research centres / institutes, like universities, are employers.

A range of criteria were mentioned within the questionnaire as the basis for the selection of members of various committees and societies (Table 1). Almost all countries, as well as the EU and WHO/FAO, mentioned individual expertise as an important criterion for selection of persons involved in setting micronutrient recommendations, whilst institutional authority (15 countries), representation of a sector (e.g. industry, academia, consumer – 9 countries) and forms of knowledge (6 countries) were other – albeit overlapping - common criteria. Most countries based their selection of persons involved in setting micronutrient recommendations on one (typically individual expertise) or two criteria (e.g. individual expertise plus institutional authority).

The type of expertise that is selected on SAC is similar across Europe. Most countries mention at least three of the following fields of expertise: nutrition, (public) health, medicine, biochemistry, food technology, epidemiology, food hygiene and toxicology. In several countries (e.g. UK) lay or consumer representatives are included in the SAC or working groups. The questionnaire data does not indicate that there are variations across countries in the propensity to recommend a policy option, based on the type of SAB responsible. However, it could be expected that policy recommendations (options for policy) made by each of the respective SABs (i.e. SAC, institutes and nutrition societies), would “resonate” to various degrees with government, stakeholders and the publics. The rationale for this is partly based upon inferences about the SAB’s independence, their eminence/credibility, their legitimacy (based on representativeness, selection criteria) and salience. The differences might be particularly notable in the way in which recommendations for the enforcement-type policy instruments (e.g. mandatory fortification, legislation on micronutrient composition in food products and labelling) are taken up by respective authorities. This will be explored in the case study.

A case study of mandatory folic acid (FA) fortification

Knowledge of the origins of recommendations is important as they indicate what possible frameworks of decision-making are operational within SABs (from framing of the problem to the possible solutions). Thus, whilst the UK’s SACN, the DGE in DACH and NNR (the Nordic countries’ NNC, now NDH) conduct own systematic reviews of all the available data
(in the problem area specified by their terms of reference, such as a specific micronutrient or
the nutrition for a particular population group), identifying possible areas of uncertainties, the
weaknesses of science and actively engaging in problem delineation, this does not appear to
be the case in CR and Hungary. Hungarian recommendations are adopted from the US, EU
and DACH recommendations, and some adjustments made with reference to the Hungarian
population surveys. The committee was not engaged in problem framing, delineation of the
criteria for systematic reviews (the type of evidence to be used) and the lengthy process of
adjudging the areas of uncertainties on which recommendations are made. In CR, the few
recommendations that exist are also based on international recommendations such as DACH.

Understanding how the process of setting recommendations and their translation into policies
varies across types of SABs will help identify some determinants of variation in final
micronutrient-relevant policy approaches, across countries. Below we will provide
assessments of the transparency of this process and describe problem formulation, evidence
gathering, micronutrient recommendations achieved, and policy options recommended as
well as how these are finally translated into policy across the seven countries in relation to
FA, chosen for its salience with regard to fortification as a policy option. Options for
mandatory, part mandatory and voluntary FA fortification attract considerable debate and
require both considerations of political and scientific nature.

Transparency of the scientific process

The UK, Norwegian, Danish and DACH SAB endeavour to provide the public with the
information on some aspects of their workings. The main sources of information are
dedicated websites, which host information on reports, meeting minutes, the make up of the
Committee and the working groups (names and affiliations), how the committee is organised,
stakeholder consultation summaries and in the UK, a document clarifying the decision-
making process in evaluating scientific evidence and recommending nutrient reference
values. The main source of information about the Nordic Nutrition Recommendations
(NNR) is the official publication published by Nordic Council of Ministers 2004. It lists the
selection criteria for the project group, the general approach for the establishment of a
recommended daily intake for certain nutrients and the methodological considerations for the
evaluation of the available evidence. The evolution of nutrition-based policies in Norway is
visible through policy documents (some of them published on official government websites) and the list of stakeholders involved in the process.

The main source for information about micronutrient recommendations in Germany is the official website of the German Nutrition Society (DGE). Information about the composition and affiliations of the working group and of other contributors is provided, as well as press releases related to the publication of the document. Summary tables are provided and the document\textsuperscript{49} is available for downloading in English language.

In the CR and Hungary, as well as Spain, there is little documentation on the official criteria and process used to establish these recommendations. In each of these countries the fragmented institutional context for the management of food and nutrition public health issues and the low priority ascribed to the nutrition matter might explain this lack of transparency.

*Fortification policies*

The case of Norway illustrates NNC’s shift from public campaign based education to recommendation of mandatory fortification in the space of less than 10 years, and a reluctance of governing bodies to follow through the scientific advice. On two occasions, in 1996 and in 1997, NNC was tasked with evaluating the needs for FA intake: in 1996, the terms of reference were the evaluation of the FA intake status for the general population, and in 1997, the evidence of the FA intake of women of childbearing age was examined. Committee members included researchers in the area of FA and diet, the Food Authorities, the Norwegian Medicines Agency, the Norwegian Board of Health Supervision and the NNC. The 1996 committee concluded there was not enough evidence to change the recommendation for the general population and that the FBDGs advice to increase fruit, vegetable, potatoes and dark bread intake was sufficient. The 1997 committee recommended an increase of FA intake to 0.4mg and recommended daily supplement and FBDG, although fortification of foods with FA was not considered a suitable option to increase intake (since the general population could be at risk of having a too high intake). A subsequent report produced in 2004 by a working group appointed by the NNC - Norwegian Directorate of Health recommended that mandatory fortification should be considered due to the unsatisfactory results of the current periconceptional FA recommendations; but as yet there is no mandatory fortification policy in Norway\textsuperscript{50}.
A similar case is reported in **Denmark**. A report on FA and neural tube defects was prepared in 1997 by the National Food Agency in Denmark based on the work of a group of experts within the area. Enrichment as a policy option was discussed but not recommended. Following the Danish Dietary Survey as well as the creation of a working group of experts for FA in 2003, the committee recommended to the Danish Veterinary and Food Administration policy makers a combined approach of both mandatory fortification and supplementation. Fortification levels were recommended to be low (0.1-0.2mg) so as to minimize risk to other population groups. To date, policy makers have not introduced compulsory fortification in Denmark and instead, and as a result of foreign experience, supplementation was upheld as the only viable policy option.

To date there is no FA food fortification policy in **Germany**; however it is currently being considered. Recommendations for the prevention of NTD by FA supplementation were given for the first time in 1994 as common recommendations by five German societies (DGE, German Society of Gynaecology and Obstetrics, German Society of Human Genetics, German Society of Paediatrics and Society of Neuropaediatrics), who recommended fortifying selected staple foods, such as bread. The fortification debate continued after the 1998 German National Health Interview and Examination Survey. Two SABs worked in parallel on the issue of FA. Final recommendations included three possible policies for FA fortified foods: mandatory fortification of wheat and rye flour all over the country; voluntary fortification of wheat and rye flour or voluntary fortification of table and cooking salt. The DGE subsequently established a FA working group which published a position paper in 2006 where mandatory fortification of baking flours with FA is favoured.

UK national food fortification with FA is currently being considered by the Health Ministers. National FA fortification was recommended in a COMA report in 2000; yet in 2002 the FSA decided against recommending mandatory fortification to the UK health ministers. This was largely due to stakeholder concerns over health risks in the elderly population and consumer concerns over lack of product choice. In 2007, following a review of evidence since the COMA report, the FSA received a draft report from SACN which recommended mandatory FA food fortification (of bread and flour) in order to decrease the incidence of NTD affected pregnancies in the UK. Recommendations also included control over industry voluntary FA fortification and the necessity of clear advice on the use of FA supplements. The SACN updated review of FA fortification allowed stakeholders the opportunity to again...
discuss mandatory fortification. Following the consultation, some of the difficulties with adopting fortification were identified however, the FSA adopted mandatory fortification of bread and flour in 2007 and presented the option to the health ministries (who have the ultimate decision about fortification) in early 2009. In order to inform the Minister's final decision on mandatory fortification, in October 2007 the Chief Medical Officer (CMO) of England, on behalf of all the UK CMOs, asked SACN to further consider two studies that suggested that FA may increase colorectal cancer risk. In 2009 SACN concluded that the new evidence does not provide a substantial basis to change its previous recommendation, it was only amended to clarify the advice on supplement use. The CMO is expected to advise UK Health Ministers of SACN’s recommendation shortly, and Health Ministers will then decide whether to approve mandatory FA fortification in the UK. The timing for this decision is not known.

In Spain the recommended intakes for FA were set by SENC (2005) and the included FBDG and supplementation as policy options. Industry has engaged in voluntary fortification of foods although currently there is no coherent effort to estimate the bioavailability of FA in food products, as well as population intake of FA.

In the CR nutrition recommendations issued in 1989 have been updated with the general nutrition recommendations of Society for Nutrition (SPV) of 2004 and recommendations of the Ministry of Health (MZ CR) of 2005; but these do not provide recommendations for total FA intake. Numeric recommendations for FA are defined in regulation which deals with the requirements for food supplements and on foodstuffs fortified with food supplements. At present a proposal for recommended dietary allowances, which also includes numeric recommendations for FA, is being prepared. This proposal is based on international publications: European Responsible Nutrition Alliance (ERNA), The Safety of Vitamin and Mineral 2002, Vitamin and Mineral Supplements 2004 and the opinion of the Scientific Committee on Food which proposes adopting the current EU nutrition recommendations. It is not clearly defined who in the CR should be involved in establishing FA recommendations. It is thought that the initiator should be the Ministry of Health together with scientific societies and the professionals in the area of nutrition so that both state-controlled and non-governmental organisations are represented.
In Hungary, reference values exist since 2006, based on international recommendations and adjusted for the Hungarian population, following a Hungarian Nutritional Survey in 2003-4. Currently in Hungary there is no mandatory FA food fortification. A FA team was created to discuss the survey results however no agreement was reached, and mandatory policy is not expected to come into force in the near future. Voluntary fortification is allowed under government policy and legislation but there is no available database showing details of the foods fortified. Voluntary FA bread fortification existed in Hungary, but has since disappeared due to a lack of official support and insufficient health education\textsuperscript{63,64}. No public stakeholder consultation exercises were set up to aid final decisions on fortification. Consumer issues were considered through the adoption of voluntary fortification which maintains that consumer choice and nutrition policies are partly visible through policy document press releases and periodical and website publications. However, micronutrient policies are exclusively discussed by scientists, medical doctors and dieticians.

**Discussion and conclusions**

The above analysis indicates that across Europe a variety of bodies are responsible for setting micronutrient recommendations, each with different statutory and legal models of operation. Where there are standing SACs, e.g. UK and Nordic countries, the processes of decision making are publicly reported, and the results of at least some interactions with policy makers and stakeholders are published in the form of consultation reports, meeting minutes and final decisions. Lack of transparent and open decision-making is characteristic of those countries where there are no dedicated publicly funded and government supported bodies dealing with nutritional issues. In the countries where there are no standing SACs or dedicated and recognised professional bodies, processes for selecting who is involved in setting recommendations, for determining which issues to focus on and how the science links with public health actions are either non-existent or non-transparent. Spain and CR are examples of countries where the links between science and regulatory realities are largely unspecified.

In the countries where standing SAC are created, the selection of experts is carried out by government; once selected, these committees appear to have a degree of autonomy in choosing the members who will sit on specific working groups or sub-committees. Nevertheless, the process is driven by self-selection, whereby prospective members of
standing and working committees must apply to be considered. In the countries without standing committees, experts are drawn from the centres of excellence or institutes with authority and long history of scientific work in the relevant area (as in the case of Spain, CR and Hungary), or through membership of professional organisations (e.g. DACH). The case of DACH is indicative of the important role that a strong professional corpus can play in providing vision and strategy, as well as active shaping of the public health agenda. In contrast to the UK/Nordic model, in the German case there is no clear separation between risk assessment and risk management/communication. DGE has a role both in setting NRV and in translating these into FBDGs and developing communication strategies of nutritional guidelines. This may be a consequence of a specific public health and risk management context within which recommendations have evolved. Arguably the situation in UK has been shaped by public disquiet about the role science plays in policy decision-making. The consequent separation of risk assessment from risk management has not been evident in Germany.

Where there is no dedicated SAB (Spain, CR, Hungary), the impetus for the development of micronutrient recommendations and the associated policies comes from interested specialists in the area. Typically in these cases we observe an ad hoc selection of problem areas to consider (e.g. which micronutrients or which population groups) based on specific institutional or individual interests and expertise, the lack of coherent approach to science informing possible decisions, over-reliance upon international scientific and political influences and policies that are neither informed by science nor a result of a transparent consultation process. When there is a dedicated SAB for nutrition, government sets its terms of reference. These are often to evaluate the current micronutrient status in the whole population or a population group, evaluate the existing evidence leading to setting country and population-specific NRVs and to reevaluate previous recommendations. However, as indicated in the analysis, their terms of reference can sometimes include a more political remit such as providing government with an assessment of feasibility of a particular policy option (although the final decision always rests with the government).

Mandatory fortification of food with FA is recommended by four (UK, Norway, Denmark, Germany) out of seven SABs studied here, however in most cases it is rejected by governing bodies as either not feasible or too sensitive to pursue. Despite our speculation that the decision made within dedicated SACs will “resonate” with government bodies and be more
likely to be adopted and translated into policy, we can see that this is not the case, especially in the case of mandatory fortification. The case of fortification, which necessitates considerations of wider socio-political context, illustrates the scope of political considerations performed by some SACs. The case study demonstrated that the science behind recommendations of mandatory FA fortification is far from conclusive - a frequently voiced concern among scientists and SAC is that excessive exposure to FA may be associated with a number of health risks, whilst ethical considerations play a part in evaluating these risks. Recent expectations to engage with stakeholders in the process of decision-making (e.g. through consultations) put a further onus on to these bodies to engage in a political process. Scientific uncertainties coupled with the political context in which SAC operate indicate that the decision for mandating folic acid fortification is in fact subjected to multiple, often subtle influences.

Extrapolating from the case of FA we suggest that the process of setting micronutrient recommendations is political as well as scientific, and call for greater transparency of the workings of these bodies, in particular of the sources and salience of different types of evidence.
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EFSA/AGRC/29MAY2009/AGENDA ITEM 7.3


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<table>
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<tr>
<th>Country / organization / region</th>
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<th>type of body</th>
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<th>persons involved</th>
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<td>Albania</td>
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<td>Republika Srpska</td>
<td>Ministry of Health and Social Welfare, supported by Public Health Institute and health centres</td>
<td>Public Health Institute: independent scientific advisory body</td>
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<td>Bulgaria</td>
<td>Ministry of Health, supported by The National Centre of Public Health Protection (NCPHP)</td>
<td>governmental</td>
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<td>Ministry of Health, department of Public Health, supported by the Scientific Committee for Food (SCF) - iodine</td>
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<td>8 (self-selected)</td>
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<td>German Nutrition Society (DGE), Austrian Nutrition Society (OGE), Swiss Society for Nutrition Research (SGE), and Swiss Nutrition Association (SVE)</td>
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<td>Nordic Committee of Senior Officials on Food Issues, EK-Livs., supported by the Working Group on Diet and Nutrition (NKE)</td>
<td>project group nominated by NKE</td>
<td>2000</td>
<td>30 (selected by government)</td>
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<td>working group (2001)</td>
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<td>1991 (COMA 1990)</td>
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</table>

All data is based on questionnaire primarily, scientific reports on recommendations secondarily, and country specific key informants in the third place.
DACH countries = Germany, Austria and Switzerland; Nordic countries = Denmark, Finland, Iceland, Norway, and Sweden; EC = European Commission; WHO/FAO = World Health Organization/Food and Agriculture Organization
na = not applicable
* data from scientific reports only