

POLICY AND PRACTICE

Nutrient profiling could be used to transform food systems and support health-promoting food policies

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ABSTRACT

Objectives: This paper aims to map and scope the opportunities to use nutrient profiling – a technique for defining the nutritional quality of individual foods or food products – to help implement interventions to improve nutrition and deliver healthy diets.

Methods: Taking the United Kingdom as a primary focus, we examined policy documents concerning food, nutrition and diet made by national, European and global governmental and intergovernmental agencies and by expert advisors. From these policy documents we extracted potential opportunities where the application of nutrient profiling could help policy implementation and policy evaluation.

Results: Over 150 specific opportunities for potential application of nutrient profiling to improve the implementation of food-related policies were identified. This list was rationalized and mapped onto a model of nutrition security and food choice determinants.

Conclusions: Nutrient profiling could be a valuable tool for policy-makers and merits much greater use than it has seen to date, across a wide range of food supply and food marketing activities, bringing potential benefit to dietary public health.

Keywords: FOOD SYSTEMS, NUTRITION, NUTRIENT PROFILING, POLICY, PUBLIC HEALTH

INTRODUCTION

The UN Decade of Action on Nutrition, proclaimed by the UN General Assembly in April 2016 (1) to implement global commitments to eradicate hunger and prevent all forms of malnutrition (2), calls for transformation of food systems to deliver healthy diets. This approach reflects a growing understanding that effective policy action to improve nutrition requires improvements across the food system, including to the food supply and across a wide range of food environments. In relation to diet-related noncommunicable diseases (NCDs), it also marks a clear move away from previous approaches based predominantly on nutrition education and behaviour change.

It is now widely recognized that an approach based on the often-cited assertion that there are “no such thing as good and bad foods, only good and bad diets” is not sufficiently precise to bring about the necessary changes to food environments to support healthy diets. In reality, there is no way to change diets without

changing intakes of specific foods. More than 100 countries have developed or are developing government-recommended food-based dietary guidelines (3) which specify the types of food which should be consumed in plentiful or greater quantities and the types which should be eaten in moderation or lesser quantities. In order to support the implementation of these guidelines in everyday dietary practices, consumers need to be able to distinguish between specific products (especially when these are composite foods or foods contained in opaque packaging) and policy-makers need to distinguish specific foods when introducing measures such as taxation, labelling controls, marketing restrictions or specifying mass catering standards. Thus, practical tools are required to be able to define the nutritional quality of a specific product.

Nutrient profile models have been developed with the specific aim of defining the nutritional quality of individual foods or food products by classifying them according to their levels of particular nutrients or ingredients of interest (4, 5). The value

of nutrient profiling is increasingly recognized, as shown by the recommendations for its use in key international policy documents and guidance in respect of the promotion of foods and beverages for infants and children (6, 7, 8). Various nutrient profile models have now been developed by a number of national authorities, industry bodies, individual companies and other organizations. In early 2015, the World Health Organization's (WHO's) Regional Office for Europe launched a nutrient profile model for use by Member States (9), and other WHO regional offices have since developed or are currently finalising their own nutrient profile models relevant to their regional contexts (10, 11). While these nutrient profile models have been developed primarily for the purpose of restricting children's exposure to the marketing of foods high in fat, sugar or salt, other uses have included front-of-package labelling, claims regulation and the setting of standards for school food provision. However, only limited work has been undertaken to explore the potential application of nutrient profiling for the implementation of food and nutrition policies beyond these areas. This paper therefore seeks to identify further opportunities to use nutrient profiling to facilitate food policy initiatives for improved nutrition and healthy diets.

METHODS

The first stage of this research was to identify food and nutrition policy recommendations from government policy documents and expert opinion. The documents reviewed included intergovernmental documents with a global or European scope, national governmental policy documents relating to the United Kingdom and its constituent nations, and expert opinion expressed in policy-focused documents in peer-reviewed journals. For the government recommendations, documents were identified by searching relevant government websites of the four nations of the UK, the European Commission, the WHO and the Regional Office. For additional policies identified through expert opinion the relevant Lancet Series were used. This review was initially conducted in 2012 and included policy documents dating back to 2000. The search was updated in 2016 to reflect the most recent policy documents. It should be noted that the search was not designed to be exhaustive but to be indicative of the nature and range of policy recommendations current at the time of the research.

The second stage of the research was to review the documents to identify the policy proposals made within them and to explore how nutrient profile models may be used to support the implementation of these policies. All policy documents were reviewed by at least two authors and the relevant policies

extracted. The policies were also mapped onto a model of nutrition security and food choice determinants, adapted for the UK Cabinet Office (12) from the WHO's Food and Health in Europe report (13), in order to provide a general conceptual view of the opportunities to use nutrient profiling to influence dietary behaviour. The mapping of policies onto this model was undertaken by all three authors separately, with the results combined and discrepancies settled by consensus.

RESULTS

The policy documents obtained included 7 at the global or general level, 11 at the European level, 2 at UK level, and 14 at the devolved administrative level (England (5), Wales (4), Scotland (3) and Northern Ireland (2)). A list of these documents is available in Supplementary Table 1.

Tables 1–3 show the wide range of opportunities and entry points throughout the food system. Table 1 identifies those opportunities relating to the food supply chain, from agricultural policies through to catering. Table 2 identifies the opportunities relating to the marketing and promotion of food and beverage products, including formulation, labelling and pricing. Table 3 identifies the opportunities relating to a range of other areas where nutrient profile models could have an impact, including taxation and subsidies, investment, social welfare, research funding, and local area planning.

In addition to the results tabulated in Tables 1–3, we have recast the findings in the form of a flowchart figure (Fig. 1) based on the food security and food choice flowchart developed by the WHO (13) and the UK Cabinet Office (12). Although more emphasis could be placed on some of the threats to nutrition security, such as low income, corporate pricing and marketing activities, the diagram shows how wide ranging the many government policy areas that influence food supplies are. We have used this schema to demonstrate the potential role that nutrient profile models can play in underpinning government action to develop policies which support healthy choices and food security.

TABLE 1. EXAMPLES OF OPPORTUNITIES FOR USING NUTRIENT PROFILING IN THE FOOD SUPPLY CHAIN

Food supply chain	Examples of opportunities for using nutrient profiling
Agricultural policies	<p>Assessing the health impact of policies as part of a health, social and environmental impact assessment (farming, fishing and aquaculture policies, and policies to incentivize production of more plant-based foods).</p> <p>Assessing potential nutrition impact of sustainable production methods.</p> <p>Assessing new products under development.</p>
International trade policy	<p>As part of health impact assessment in negotiations for multilateral, regional or bilateral trade agreements.</p> <p>Use to negotiate different terms of trade where health criteria other than food safety are rarely invoked.</p> <p>Designing trade measures that can have a positive nutritional impact on the food supply.</p>
Primary producers	<p>Assessing the nutritional impact of changing agricultural production methods.</p>
Food manufacturers and processors	<p>Reformulation: setting mandatory or voluntary targets for reformulating products; informing companies' decisions on new product development and reviewing existing products; assessing a company's overall product portfolio, and to set targets for change.</p> <p>Portion size: assessing the impact of changing portion sizes and identifying priorities for action.</p> <p>Replacing trans fats: assessing products where trans fats have been removed, and monitoring the situation.</p> <p>Complementary foods: assessing foods for infants and young children.</p> <p>New product development: setting targets for product portfolio and to guiding new product development or corporate mergers and acquisitions.</p> <p>New technologies for foods low in fat, sugar or salt: guiding R&D to ensure new products are all-round healthy.</p> <p>Government support for food technology research: setting criteria for public funding for food technology research.</p> <p>Self-regulation: evaluating industry efforts to improve the health profile of foods and drinks.</p>
Food wholesalers and retailers	<p>Retailers: evaluating retailers' product portfolio, to define targets and to measure progress.</p> <p>Incentives for retailers to offer healthier choices in areas with poor access: enabling local shops to expand their portfolio of healthy products suitably displayed and to qualify for incentive schemes.</p> <p>Healthy products as loss leaders: identifying appropriate healthy products.</p>
Caterers in local government facilities (schools, early years care, colleges, social care, elderly care, leisure facilities, council offices)	<p>Food in public institutions: monitoring/controlling the nutritional content of foods sold or served in public institutions; assessing contractor companies; setting standards for food to be served or sold in public institutions; assessing the impact of modifying portion size, and guiding this process; and identifying foods high in fat, sugar or salt for which commercial information should be limited.</p> <p>Pricing: identifying products that should be offered at a high price (less healthy products) and those which should have a lower price (more healthy products) to encourage consumption.</p> <p>Public procurement: in procurement contracts, assessing companies tendering for contracts and setting standards for food in public institutions; incorporating into toolkits for catering companies to improve their understanding of healthy foods and to guide their practice.</p> <p>Inspection/regulation: for assessing good nutritional practice as part of regulatory inspections.</p> <p>Childcare: identifying products which are suitable to be provided, made available and/or brought into childcare facilities.</p> <p>Community meals (meals on wheels): assessing meals, evaluating tendering companies and guiding procurement process.</p>
Caterers in health care facilities (for patients, staff and visitors)	<p>Setting standards: setting standards for hospital food for patients, staff and visitors; setting standards for food sold in kiosks, vending machines and cafeterias for visitors and staff; providing nutrition information (menu labelling); guiding patient nutrition services.</p> <p>Contracts: assessing companies, tendering for catering contracts.</p> <p>Concessions: assessing companies for eligibility to run a concession outlet within hospitals.</p>
Schools	<p>Vending machines, tuck shops, breakfasts, packed lunches, special events: identifying appropriate foods to be sold or served in state and independent schools; defining that foods high in fat, sugar or salt should not to be available in schools.</p> <p>Inspections: assessing food provided in schools as part of inspection process.</p>

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Food supply chain	Examples of opportunities for using nutrient profiling
Schools	<p>Guidance for governors and staff: integrating nutrient profiling into guidance to help define and describe foods, and assess companies.</p> <p>Healthy takeaway service in schools: investigating this and other innovative options for school meals; assessing foods.</p> <p>Healthy schools rating: assessing foods provided in schools as part of a broader healthy schools assessment.</p>
Other public sector catering: civil service, uniformed services	<p>Food in other public sector catering: monitoring the nutritional content of foods sold or served in public institutions; assessing contractor companies; setting standards for food to be served or sold in public institutions; assessing the impact of modifying portion size, and to guide this process; identifying foods high in fat, sugar or salt for which commercial information/marketing should be limited.</p>
Caterers in private sector workplace	<p>Provision of healthy choices: assessing nutritional quality of food offered and to encourage a progressive move to wider provision of healthy choices.</p> <p>Menu labelling: providing nutrition information to employees.</p>
Commercial catering: high street, hotel, motorway, airport	<p>Reformulation: setting targets for reformulation of fast food.</p> <p>Menu labelling: supporting for caterers with the provision of menu labelling.</p>
All catering	<p>Healthy eating awards: defining healthy products that qualify for awards, or assessing caterers' provision of healthy/unhealthy foods.</p> <p>Reformulation and menu labelling: improving nutritional quality and providing menu labelling.</p> <p>Improving access and affordability: defining healthier food products to apply measures to make these products more accessible and affordable.</p> <p>Nutrition education: supporting nutrition education for catering staff; supporting a free nutrition advisory service for caterers.</p>

TABLE 2. EXAMPLES OF OPPORTUNITIES FOR USING NUTRIENT PROFILING IN FOOD MARKETING AND PROMOTION

Food marketing – private sector	
Portion	<p>Portion size: assessing the impact of changing portion sizes and identifying priorities for action.</p>
Position	<p>Product positioning: identifying healthier foods to be positioned to encourage consumption.</p>
Packaging and labelling	<p>Nutrition information: setting criteria for mandatory traffic light labelling scheme based on nutrient profile in both retail (labels, shelf tickets) and catering (menu labelling).</p> <p>Claims: setting criteria for nutrition and health claims and to disqualify foods from carrying claims if they are unhealthy.</p>
Price	<p>Pricing strategies: retailers, caterers, public institutions identifying foods which should be priced relatively high and those to price lower to encourage consumption.</p>
Promotion	<p>Promoting healthier foods: manufacturers, retailers and caterers using nutrient profiling to define the balance of price promotions between healthy and unhealthy products (define a target percentage and monitor implementation).</p> <p>Social marketing: assessing the impact of social marketing techniques and for monitoring/evaluation.</p>
Media controls	<p>Marketing to children: extending, based on existing use for controls on broadcast advertising to children, to all controls on marketing (including non-broadcast, online and new media marketing).</p> <p>Cross-border standards: defining cross-border standards for marketing of foods and drinks to children.</p> <p>Foods for infants and young children: defining rules for marketing foods for infants and young children.</p>
Sponsorships	<p>Schools: identifying foods (or assessing companies) for which commercial communications, including sponsorship, should not be allowed in schools.</p> <p>Sponsorship: identifying which companies from which it is appropriate for community organizations, clubs, churches, workplaces, sports events, etc. to accept sponsorship.</p> <p>Public sector: assessing whether companies are appropriate to provide sponsorship to the public sector.</p>

TABLE 3. EXAMPLES OF OPPORTUNITIES FOR USING NUTRIENT PROFILING IN OTHER SECTORS OF THE FOOD SYSTEM

Other sectors	
Government food and nutrition policy	<p>National action plans: setting targets for dietary change and incorporate these targets into action plans; defining and describing food within Food-based dietary guidelines and defining priorities for communication campaigns.</p> <p>Monitoring: monitoring the food environment, in the setting of indicators to monitor progress and, specifically, assessing the situation for different population groups.</p> <p>Health impact assessment: incorporating nutrient profiling into methods to assess impact of programmes or policies on consumption of healthy or unhealthy foods (for example economic, trade, transport, agriculture, industry and urban/rural development policies).</p> <p>Limiting commercial interests: identifying companies to be excluded from policy formulation process.</p> <p>Multi-sectorial mechanism for national food and nutrition policy: as a tool for planning, monitoring and evaluating national policy.</p>
Social support and welfare	<p>Food poverty: assessing the impact of actions to tackle food poverty and interventions to improve access to affordable healthy food; ensuring that social protection measures (vouchers, etc.) improve access to healthy foods.</p> <p>Welfare: defining foods which qualify for subsidised or free distribution; assessing foods provided at home through welfare support schemes.</p> <p>Defining healthy sustainable food: defining healthy sustainable food so that access and affordability can be evaluated and monitored.</p>
Fiscal policies, VAT, taxes, subsidies (including the Common Agricultural Policy)	<p>Taxes/subsidies: identifying foods to be taxed/levied or those which qualify for subsidies.</p> <p>Trade and fiscal policies: assessing the health impact of trade and fiscal policies.</p>
Investors	<p>Assessing companies: assessing companies' overall portfolio and to measure their progress on nutrition, particularly whether their portfolio of products is getting healthier.</p> <p>Investment: assessing the likely impact of nutrition investment and assess the suitability of private sector investors/ investment.</p>
Research	<p>Innovation: assessing products coming through research pipeline to ensure products are all-round healthy; assessing research priorities and ensure that agriculture, fisheries and technology research is working towards dietary goals; informing science and technology funding of R&D to ensure that it promotes development of healthier products.</p> <p>Research and education funding: identifying companies from which research or educational funding should not be accepted.</p> <p>Monitoring the food environment: assess and monitor the nutritional quality of the food environment alongside retailers' electronic point of sale data.</p> <p>Environmental and food security goals: assessing the impact of policies to meet environmental and food security goals on nutritional quality of diets.</p>
Urban planning	<p>Schools: assessing outlets in the school vicinity and to inform planning decisions about the location of any new outlets, licences for mobile food vendors or siting of advertising billboards, etc. near schools.</p> <p>Encouraging retailers in underserved areas: informing planning decisions and identifying which retailers should be encouraged (qualify for tax breaks, eligibility for grants, etc.)</p> <p>Planning: guiding planning decisions on the location and distribution of shops, markets, fast-food outlets and other commercial catering establishments.</p>

TABLE 3. EXAMPLES OF OPPORTUNITIES FOR USING NUTRIENT PROFILING IN OTHER SECTORS OF THE FOOD SYSTEM

Other sectors	
Education and mass media campaigns	<p>Public education: as a tool for nutrition education to help understanding of nutrition messages and applying these to food and shopping decisions.</p> <p>Nutrition education for health, education and childcare professionals: as a tool for nutrition education.</p> <p>Schools: defining and describing foods and communicating clear messages about foods to children.</p> <p>Child caregivers: informing guidance to caregivers for young children.</p> <p>Use nutrient profiling as a tool as part of food skills education: integrating into practical courses and use to assess recipes.</p> <p>Industry contribution to government campaigns: ranking companies according to the health of the products they sell and calculating the size of the contribution these companies should make to financing government campaigns.</p>
Civil society	<p>Accountability: monitoring policies and practices to be able to hold government, industry and public services to account.</p> <p>Influencing industry: assessing companies' product portfolios and to evaluate and rate their commitment to change in order to raise consumer and investor awareness and, in turn, encourage change.</p>
Technology	<p>New technology: developing tools (for example mobile phone app lication s) to help people make healthy choices.</p>

DISCUSSION

The results shown here have demonstrated the range of opportunities available to extend the application of nutrient profiling throughout the food system in order to support the policy recommendations that have been made to date. Although we have used the UK as the basis for the analysis, the policies are derived from documents published both within and outside the UK, and the results are broadly applicable to many other countries, particularly across Europe, although the precise policy opportunities may need to be adapted to the specific context.

Efforts to classify foods as healthy or less healthy are not new. In the UK, proposals to provide consumers with summary information on the levels of nutrients in individual foods were developed and trialled in the 1980s. These included the Coronary Prevention Group's labelling schemes (14, 15) which banded the nutrient levels in packaged foods, and the London Food Commission's rating system (16) for menu items in catering outlets. In the 2000s, a single scoring method was developed for use in the regulation of advertising of foods and beverages on children's TV programming, implemented by the UK regulator Ofcom (17), and colour-coded front-of-pack nutritional information was introduced as a voluntary scheme in the UK based on the Coronary Prevention Group banding levels (14).

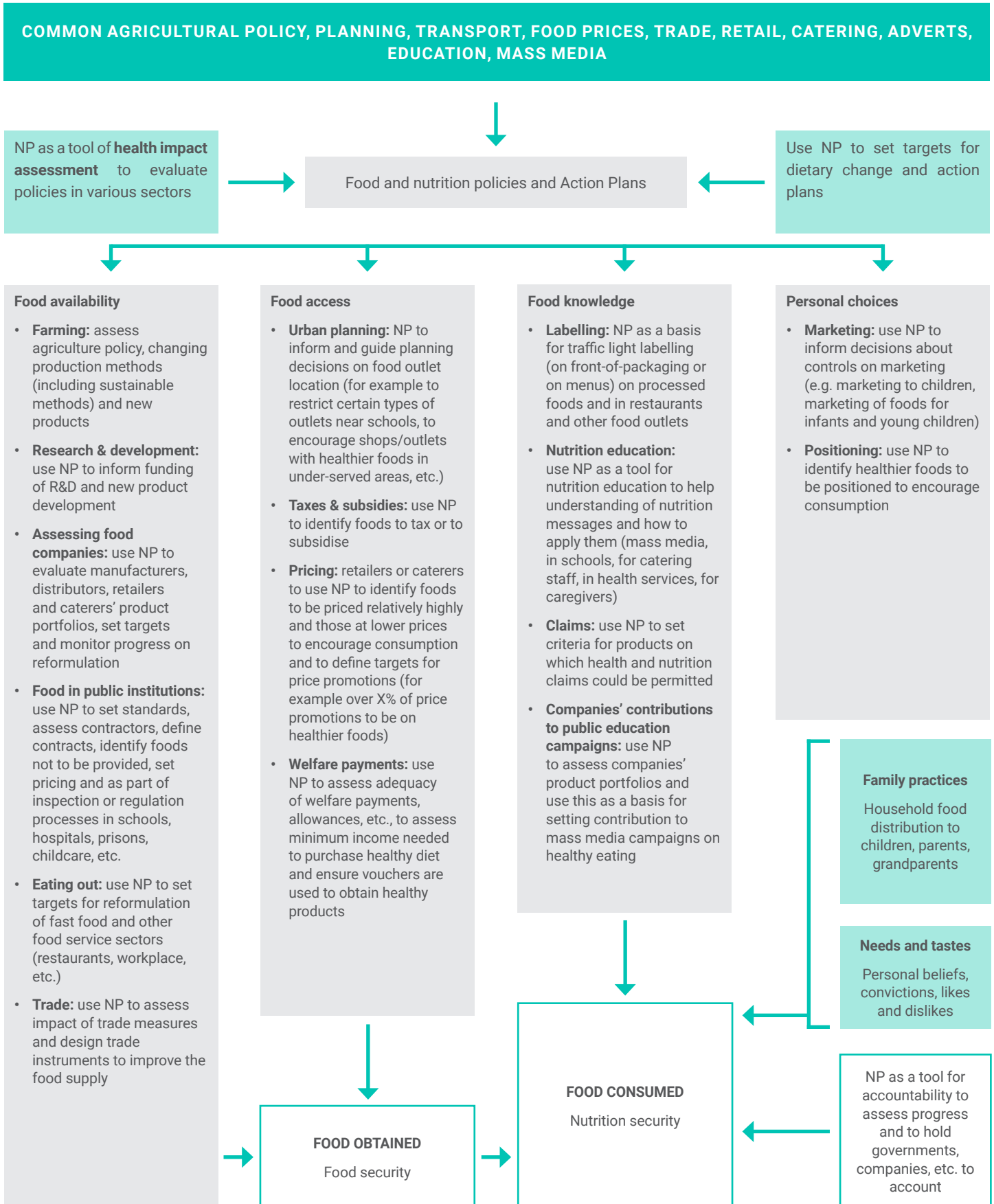
Experience has already shown that the application of nutrient profiling can be a critical factor in turning laudable food policy aims into concrete results. After decades of stated policies that

consumers should have the information they need to be able to make healthier choices, a number of governments – including Australia, Chile, Ecuador, France, Finland, New Zealand, the Nordic countries, Singapore, South Korea and the UK – have introduced interpretive front-of-pack labelling schemes based on nutrient profiling (18). Industry-sponsored healthy option labelling schemes have also been developed on the basis of nutrient profiles. Although many of the government schemes are not yet universally required or sufficiently comprehensive, the application of nutrient profiling has been essential in realising this step towards a policy goal.

Similarly, the practical application of nutrient profiling to identify foods high in fat, salt or sugar has been a critical step in many authorities implementing measures to restrict marketing of certain foods to children, as well as in the development of voluntary industry pledges to reduce such marketing. Much more progress is needed to ensure that such measures fully protect children and young people in practice (19), but nutrient profiling is likely to remain a key element in any measure that is based on reducing (rather than eliminating) children's exposure to marketing.

Recently, there are signs of increasing application of nutrient profiling beyond the domains of labelling or marketing restrictions. Some UK retailers have been using nutrient profiling to implement commitments to shift the balance of price promotions or to guide their own-label new product development. Nutrient profiles are being applied to define foods to be restricted or eliminated from

FIG. 1. NUTRIENT PROFILING (NP) AS A TOOL TO IMPROVE NUTRITION SECURITY: OPPORTUNITIES IN INFLUENCING FOOD CHOICE DETERMINANTS



school premises across a growing number of jurisdictions – including Brazil, Mexico, Poland and the state of Queensland in Australia. There are efforts underway to explore the use of nutrient profile models to improve public sector procurement of food and nutrient profiling is used in new guidance on healthy procurement of food in the school setting, issued under Malta's presidency of the European Union (EU) in 2017.

In the present paper, our examination of policy proposals has identified a wide range of potential uses of nutrient profile models as policy implementation tools to improve public health nutrition. As well as supporting policy implementation, nutrient profiling also offers the opportunity to assess the credibility of food companies' broad-ranging statements about their commitment to improve the nutritional quality of the foods they sell. Holding food companies to account for their health impact is an important step in ensuring the companies are responsibly governed (20), and the use of nutrient profiling could be a key element in this process, allowing investors to assess a company's product portfolio, and to set targets, monitor change and evaluate the extent of their progress. Investment banks and investment advisory services – especially those purporting to hold ethical positions – could develop a common approach to evaluating company activity. In addition, governments, international organizations and civil society could use nutrient profiling to assess food companies' performance and progress towards stated commitments in order to evaluate suitability for any public-private collaboration.

The potential use of nutrient profiling also opens up the possibilities for more meaningful assessment and evaluation of the impact of other policies on nutrition and health. Nutrient profiling offers a novel and valuable tool for the systematic application of health impact assessments and to ensure coherence between environmental and health objectives.

The present paper has limitations in its findings and in the use of the results. The list of policies obtained from policy documents was intended to be indicative of the types of policies widely recommended by public bodies, and not an exhaustive listing of all such policies. It is likely we have missed some potential applications of nutrient profiling and we recommend further efforts are made to explore where these may be. Our application of the policies to a model, in order to provide a framework covering the food supply chain, was dependent on the quality and extent of the model, and again we may have missed sectors and activities which are amenable to improvement through the application of a nutrient profile approach.

Furthermore, we are aware that the application of nutrient profiling is not without potential costs, both economic costs to commercial operators who bear the burden of making changes to food supplies, but also political costs to legislators championing public health in the face of resistance by powerful vested interests (21). We also assume that policy-making officials and legislators will want to assess the likely health benefits and to undertake monitoring and evaluation of the introduction of any nutrient profile-based policies. We recommend that these issues are the subject of a technical review, perhaps by the WHO, whose work to provide a framework for the development of nutrient profile models applicable across multiple Member States is welcome. In practical terms, it may be easier for policy-makers to adapt an existing nutrient profile model than to develop their own model from scratch. For this reason, governments and organisations with practical experience of using nutrient profiling are urged to share the lessons they have learned when implementing their policies.

Lastly, we note that nutrient profiling is only one of several valuable approaches to improving policy development. Examples of further tools include food product formulation standards, food environment indicators such as those being developed under the International Network for Food and Obesity / Noncommunicable Diseases Research, Monitoring and Action Support (INFORMAS) project (22), and health impact assessments to evaluate all policies.

CONCLUSION

This paper has demonstrated the wide range of opportunities to extend the application of nutrient profiling throughout the food system in order to support the policy recommendations that have been made to date. The findings demonstrate the current use of nutrient profile models, primarily for food marketing restrictions, health claims, labelling and school meals, is far from the potential that could be realized.

Nutrient profiling is a powerful tool for policy-makers and merits much greater use than it has seen to date. The authors hope that this paper will raise awareness of the potential for wider application of nutrient profiling for promotion of public health. In this way, there is scope to transform both the supply and demand sides of food systems to deliver healthy diets.

SUPPLEMENTARY TABLE 1. POLICY DOCUMENTS INCLUDED IN THE SEARCH*

	Source	Title
General/global	WHO, 2016	Commission on Ending Childhood Obesity. Final Report, 2016
	WHO/FAO, 2014	Second International Conference on Nutrition Framework for Action, 2014
	The Lancet, 2013	Non-Communicable Diseases Series 2013
	WHO, 2013	Global Action Plan for the Prevention and Control of Noncommunicable Diseases 2013–2020
	The Lancet, 2011	Obesity Series 2011
	WHO, 2008	2008–2013 Action Plan for the Global Strategy for the Prevention and Control of NCDs
	The Lancet, 2015	Obesity Series 2015
Europe	WHO Europe, 2015	European Food and Nutrition Action Plan 2015–2020
	European Commission, 2014	EU Action Plan on Childhood Obesity 2014–2020
	WHO, 2012	Health 2020 – a European policy framework supporting action across government and society for health and well-being
	WHO Europe, 2012	Action Plan for Implementation of the European Strategy for the Prevention and Control of Noncommunicable Diseases 2012–2016
	European Heart Network, 2011	Diet, Physical Activity and Cardiovascular Disease Prevention in Europe
	European Commission, 2007	A Strategy for Europe on Nutrition, Overweight and Obesity related health issues
	WHO Europe, 2006	European Charter on Counteracting Obesity
	European Commission, 2006	Nutrition and Obesity Prevention
	WHO Europe, 2000	First Action Plan for Food and Nutrition Policy for WHO European Region 2000–2005
	WHO Europe, 2007	European Action Plan for Food and Nutrition Policy 2007–2012
	WHO Europe, 2004	Food and health in Europe: a new basis for action
UK	UK Cabinet Office, 2008	Food Matters: Towards a Strategy for the 21 st Century
	Government Office for Science, 2007	Foresight Tackling Obesities: Future Choices – Project Report
England	Department of Health, 2016	Childhood Obesity: A Plan for Action
	Department of Health, 2005	Choosing Better Diet – a food and health action plan
	Department of Health, 2010	Healthy Lives, Healthy People: our strategy for public health in England
	Department of Health, 2011	Healthy Lives, Healthy People: A call to action on obesity in England
	Department of Health, 2004	Choosing Health – Making healthy choices easier
Northern Ireland	Health Promotion Agency, 1996	Eating and Health – A food and nutrition strategy for Northern Ireland
	Social Services and Public Safety for Northern Ireland, 2005	Fit Futures: Focus on Food, Activity and Young People
Scotland	Scottish Government, 2009	Recipe for Success – Scotland's Food and Drink Policy
	Scottish Government, 2008	Healthy Eating, Active Living: An action plan to improve diet, increase physical activity and tackle obesity 2008–2011
	Scottish Government, 1996	Scottish Diet Action Plan
Wales	Welsh Government, 2013	Welsh Public Health Green Paper consultation
	Welsh Government, 2012	Welsh Public Health Green Paper
	Welsh Government, 2010	Food for Wales, Food from Wales 2010–2020
	Food Standards Agency Wales	Food and Well Being: Reducing inequalities through a nutrition strategy for Wales

*Full references to all mentioned publications are listed in bibliography, items 2, 7, 13, 23–53

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Conflicts of interest: None declared.

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