

Review

Monitoring policy and actions on food environments: rationale and outline of the INFORMAS policy engagement and communication strategies

H. Brinsden^{1#}, T. Lobstein^{1,2#}, J. Landon^{2,3#}, V. Kraak^{4#}, G. Sacks^{4#}, S. Kumanyika^{5#}, B. Swinburn^{4,6#}, S. Barquera⁷, S. Friel⁸, C. Hawkes⁹, B. Kelly¹⁰, M. L'Abbé¹¹, A. Lee^{12,13}, J. Ma¹⁴, J. Macmullen¹⁵, S. Mohan¹⁶, C. Monteiro¹⁷, B. Neal¹⁸, M. Rayner¹⁹, D. Sanders²⁰, W. Snowdon^{4,21}, S. Vandevijvere⁶ and C. Walker²² for INFORMAS[^]

¹International Association for the Study of Obesity, London, United Kingdom; ²Public Health Advocacy Institute of Western Australia, Curtin University, Perth, Western Australia, Australia; ³United Kingdom Health Forum, London, United Kingdom; ⁴WHO Collaborating Centre for Obesity Prevention, Deakin University, Melbourne, Victoria, Australia; ⁵Perelman School of Medicine, University of Pennsylvania, Philadelphia, Pennsylvania, United States of America; ⁶School of Population Health, University of Auckland, Auckland, New Zealand; ⁷National Institute of Public Health, Mexico City, Mexico; ⁸National Centre for Epidemiology and Public Health, Australian National University, Canberra, Australian Capital Territory, Australia; ⁹World Cancer Research Fund International, London, United Kingdom; ¹⁰School of Health and Society, University of Wollongong, Wollongong, New South Wales, Australia; ¹¹Department of Nutritional Sciences, University of Toronto, Toronto, Canada; ¹²School of Public Health and Social Work, Queensland University of Technology, Brisbane, Queensland, Australia; ¹³School of Exercise and Nutrition Sciences, Queensland University of Technology, Brisbane, Queensland, Australia; ¹⁴Chinese Center for Disease Control and Prevention (CCDC), Beijing, China; ¹⁵Consumers International, London, United Kingdom; ¹⁶Public Health Foundation of India, New Delhi, India; ¹⁷School of Public Health, University of Sao Paulo, Sao Paulo, Brazil; ¹⁸The George Institute for Global Health, University of Sydney, Sydney, New South Wales, Australia; ¹⁹British Heart Foundation Health Promotion Research Group, University of Oxford, Oxford, United Kingdom; ²⁰School of Public Health, University of the Western Cape, Cape Town, South Africa; ²¹Pacific Research Centre for the Prevention of Obesity and Non-communicable Diseases (C-POND), Suva, Fiji; ²²Global Alliance for Improved Nutrition (GAIN), Geneva, Switzerland

Address for correspondence: T Lobstein, IASO, Charles Darwin House, 12 Roger Street, London WC1N 2JU, UK.
E-mail: tlobstein@iaso.org

Summary

The International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support (INFORMAS) proposes to collect performance indicators on food policies, actions and environments related to obesity and non-communicable diseases. This paper reviews existing communications strategies used for performance indicators and proposes the approach to be taken for INFORMAS. Twenty-seven scoring and rating tools were identified in various fields of public health including alcohol, tobacco, physical activity, infant feeding and food environments. These were compared based on the types of indicators used and how they were quantified, scoring methods, presentation and the communication and reporting strategies used. There are several implications of these analyses for INFORMAS: the ratings/benchmarking approach is very commonly used, presumably because it is an effective way to communicate progress and stimulate action, although this has not been formally evaluated; the tools used must be trustworthy, pragmatic and policy-relevant; multiple channels of communication will be needed; communications need to be tailored and targeted to decision-makers; data and methods should be freely accessible. The proposed communications strategy for INFORMAS has been built around these lessons to ensure that INFORMAS's outputs have the greatest chance of being used to improve food environments.

Keywords: Communications strategy, food environments, INFORMAS, monitoring.

obesity reviews (2013) **14** (Suppl. 1), 13–23

[#]Members of the writing group for this manuscript are listed in order of their contribution to the writing of the manuscript.

[^]INFORMAS is the International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support. All authors who are not members of the writing group are listed in alphabetical order, and contributed to discussion of the key concepts and issues raised in this manuscript as part of the first formal meeting of INFORMAS from 19 to 23 November 2012.

Introduction

The 2010 Global Burden of Disease report (1) has highlighted the increasing contribution of food, nutrition and dietary patterns to the burden of non-communicable diseases (NCDs), and strengthened the case for policies to tackle NCDs by improving the healthfulness of food environments (2).

As indicated in the overview paper in this supplement (3), an International Network for Food and Obesity/NCD Research, Monitoring and Action Support (INFORMAS) has been established as a global network of public interest organizations and researchers that aims to monitor, benchmark and support public and private sector actions to create healthy food environments and reduce obesity, NCDs and their related inequalities. The structure of INFORMAS is built around a series of modules that will examine public and private sector's policies and actions, and their impact on various aspects of food environments. A significant amount of data is expected to be collected by INFORMAS. There is a need to consider how the data from each of the INFORMAS modules may be integrated into a coherent set of indicators and other forms or products that can be communicated to wider stakeholders to support both policy development and implementation. This may require input from experts outside of the field of public health.

Some aspects of food environments and the policies and actions that shape them have previously been investigated. Much of this previous research has focused on developing instruments and approaches to measure different aspects of specific food environments (e.g. retail stores, restaurants, schools or worksites) (4,5) and factors that shape purchasing behaviour and food intake, analysing subsectors for sales trends, food availability and pricing strategies, or analysing commercial data to characterize food and eating environments (6). Global and national databases can be used to identify food supply, sales and purchasing patterns, and can be supplemented by surveys of food use, household distribution and consumption patterns (7,8). Additional research has focused on the description and assessment of policies and actions undertaken by public and private sector stakeholders to create health-promoting food environments for populations (9–11).

There is, however, a need for a set of policy-relevant and globally feasible metrics which can be used to define and numerically benchmark these policies and their effects on food environments. This has been attempted for the World Health Organization's (WHO) Framework Convention on Tobacco Control (12) and for assessing the implementation of the International Code of Marketing of Breast-Milk Substitutes (13). While some degree of flexibility can be considered in order to account for national and local contexts, a common set of approaches and metrics is expected

to help to establish good practice performance for governments, industry and other stakeholders to reduce the burden of obesity and NCDs. INFORMAS is developing such metrics as the first step to informing and advancing progress on improving the healthfulness of food environments. These will then need to be effectively and widely communicated and adopted for them to have an impact on policies and practices.

The purpose of the present paper is to examine the use and nature of performance indicators in public health to both support the development of public health policy and monitor the extent of policy implementation to promote healthy food environments. Insight from this will guide the policy engagement and communications strategies of INFORMAS.

It should be noted that there is very little evidence of the effectiveness and validity of using such indices in supporting policy development. However, for present purposes, it is assumed from the widespread use of such indices in many policy areas, including in public health (such as in tobacco and alcohol control), that this approach is an effective way to communicate with decision-makers. It should also be noted that the use of indices in policy advocacy is discussed in the commentary by Lobstein *et al.* elsewhere in this supplement (14).

Methods

A search was conducted to identify tools and indicators being used to assess the existence of policies and actions, the extent of implementation of policies, or to inform policy development, in areas of public health related to NCDs. Tools of particular interest were those which use scoring systems, report cards and performance indices, and which had been used by public bodies or public-interest organizations to monitor, evaluate, benchmark and publicly report on the need for public health policies and progress towards their implementation. As a starting point, a search in the WHO website was conducted in September 2012, and again in April 2013, for relevant reports under five headings: tobacco control, alcohol, maternal and child nutrition and health, physical activity, and food and nutrition security. From the reports cited on the WHO website, additional relevant websites, reports and surveys were identified (snowball sampling). Supplementary materials were identified based on the authors' expertise and knowledge in the area. A tool was included if it met the following criteria: (i) it was based on sets of indicators that were measurable, available, realistic and time-defined (e.g. implementation of a policy into regulation, financial expenditure on policy initiatives, surveys of outcome or behaviour); (ii) it was sufficiently transparent in its construction that it could be replicated and reported on in subsequent years; (iii) it had

the specific intention of evaluating or monitoring the development or impact of public health policies linked to NCDs or obesity.

A large number of potential tools were identified across a wide range of policy areas, including health protection and disease prevention, environmental quality, and economic and social development. The purpose of the present review is to provide indicative results only, rather than a comprehensive analysis: after the first 50 examples of tools had been identified using the approach described above, two of the authors (HB, TL) examined them jointly in order to select those which could indicate both generality and variety, i.e. (i) could demonstrate similar approaches across different public health fields; (ii) could demonstrate different approaches within similar public health fields. On this basis, 27 tools were selected, and the results are listed in Table 1, with more details provided in Supporting Information Table S1.

Results

The 27 tools were analysed for the approaches they used for reporting their surveillance of indicators. These ranged from scorecards based on the ratings of composite sets of indicators, report cards that gave a single grading, narrative reports of the extent of policy adoption or policy implementation, to awards given for high and low performance of national governments and other stakeholders in meeting the indicators. These may be undertaken annually or using some other time period, in order to establish trends.

Types of indicators used

The indicators used can be broadly divided into three categories: those that are based on processes, such as the adoption, implementation or compliance with policies by both public and private sectors (e.g. tools no. 1–6, 12, 15–18, 22 in Table 1); those used to measure outcomes and effectiveness of policies (e.g. tools no. 7, 8, 10, 11, 20, 21, 23–25); and those that make an assessment based on stakeholders' views derived from structured questionnaires or evaluative scoring processes (e.g. tool no. 18).

Quantifying the indicators

The majority of indicators were found to be quantified in some way so as to yield a summary composite score. Most commonly, a basic score per indicator was used which was reported alongside a summary/interpretative composite score, using either weighted or unweighted components (e.g. tools no. 8, 10, 25). Weighted components were used in order to adjust the degree of importance of these components to the overall score. In several cases, the scores were recorded in such a way that comparisons could be

made with other data sets collected in other locations or across different time periods (e.g. tools no. 20, 23, 24). In some reports, only basic indicator scores were provided with no summary or interpretative score (e.g. tools no. 4, 22, 23). In a few cases, a summary composite score was reported without presenting the component base indicator scores (e.g. tools no. 18, 24).

Interpretation of the indicators and scoring methods

The nature of the summary composite score took several forms. In some cases, the composite score was presented as a proportion (%) meeting a specified indicator (e.g. tools no. 1, 4, 9) or as a change in the percentage meeting the specified indicator over time (e.g. tools no. 15, 16, 20, 21), without any explicit interpretation as to the implication of such a score. In other cases, a scale such as 0 to 100 or 1 to 10 (e.g. tools no. 2, 7, 13, 18, 19) was used which provides an inferred, but not explicit, interpretation.

Several cases were identified whereby explicit interpretations of the scores were given. In these cases, results were clustered and categorized, so that a score of, say, 3 or 4 was described as 'poor' while one of 5 or 6 merited 'fair', 7 or 8 'good' and 9 or more 'very good' (e.g. tools no. 5, 6, 8). In some cases, scores were clustered and named as if they were school report cards, classified from 'A' (best) down through 'F' (poorest) (e.g. tools no. 3, 14).

Presentation of the scores

Scoring methods commonly included a ranking by score and listing by rank, so that highest-scoring regions, countries, states etc., were listed first and lowest scoring last (e.g. tools no. 10, 11, 12, 13, 21, 26), or a curtailed version of this in which only a few of the best (such as 'top ten') and worst ('bottom ten') were shown (e.g. tool no. 7). These ranking methods could also be used to provide comparative trend analyses, in which either the magnitude of change or the direction of change in an indicator score is shown, with the best performers being emphasized (e.g. tools no. 8, 15, 20, 21).

Communication of the scores, ratings and rankings

Besides the formats for the scoring processes provided in report cards, the methods for disseminating the findings were also examined. In Table 1, we show which scoring results are made available publicly, to whom they are primarily disseminated, what form of presentation are commonly used, and whether there is evidence that social media are being used to enhance dissemination.

Table 1 Examples of tools used to monitor existing policies and actions for addressing public-health challenges and methods for communication employed

Report example	Tools used	Communication strategy												
		Stated purpose	Type of indicator	Scale used	Open access	Policy makers	Academics	Consumers	NGO sector	Corporations	Presentation	Social media		
Tobacco control	1. FCTC progress report (24) 2. Tobacco control scorecard (25) 3. Report card on tobacco policy (26)	To support the implementation of the FCTC by tracking progress and mapping the overall status of implementation. To support the implementation of tobacco control policies in Australia by tracking progress state by state. To improve federal and state level tobacco control policies in the US through objective evaluation and tracking progress.	U, I U, I, L U, I	Percentages meeting each indicator 0-10 per indicator, overall rated 0-100 points grades awarded from A to F.	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	Facebook Twitter LinkedIn	
Alcohol	4. Global status report on alcohol and health (27)	To help WHO member states to reduce the harmful use of alcohol, and its health and social consequences.	I	Assessed based on % meeting each indicator	✓	✓	✓	✓	✓	✓	✓	✓	✓	Facebook Twitter LinkedIn
Maternal and child nutrition and health	5. Breastfeeding policy scorecard (28,29) 6. State of the Code (30-32) 7. Mother's index (29) 8. Infant and toddler feeding scorecard (29)	To monitor breastfeeding policies in 36 industrialized countries. To survey the measures taken by governments to implement the International Code of Marketing Breastmilk Substitutes so as to increase compliance. To evaluate and report the status of women's health, nutrition, education, economic well-being and political participation in 165 countries. To analyse and report the status of child nutrition in 73 priority countries where children are at greatest risk of dying before the age of 5 years or where they are dying in the largest numbers.	I U U	Average of all indicators. 3-4 = poor; 5-6 = fair; 7-8 = good; ≥9 = very good. Countries categorized into one of nine categories. Data pulled together to form the IBFAN scale of code compliance Ranking the 10 best countries to be a mother (rank 1-10) and the 10 worst (rank 156-165). % meeting indicators and graded very good, good, fair and poor	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	Facebook Twitter LinkedIn	
Physical activity	9. Breastfeeding report card (33) 10. Report card on child well-being (34) 11. State trends in child well-being (35) 12. Bicycling and walking benchmarking (36) 13. American fitness index (37) 14. Healthy active kids South Africa report card (38)	To improve breastfeeding rates and breastfeeding policies in US states. To encourage monitoring, to permit comparison and to stimulate the discussion and development of policies to improve children's lives. To promote progress in child well-being at a state and national level in the US. To support policies to increase walking and bicycling by measuring progress, determining best practice and comparing cities and states in the US. To support community collaboration and engagement with physical activity and healthy lifestyle initiatives in the US. To identify the need for policy development to support healthy behaviours among children in South Africa.	U, I U U U, I, L U U, I	Prevalence - % meeting indicators Process - % meeting, per 1,000 people or ratio Countries ranked 1-21 based on indicator results Overall score and ranking 1(best) - 50 (worst state) per indicator Number who have each indicator implemented, then ranked from best to worst Ranking, 1-50, based on year on year comparison. Further categories into areas of excellence of priority areas for each state A-F based on degree of best practice, reach, impact and risk.	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	✓ ✓ ✓ ✓ ✓ ✓	Facebook Twitter LinkedIn	

Table 1 *Continued*

Report example	Tools used	Stated purpose	Type of indicator	Scale used	Open access	Communication strategy																
						Policy makers	Academics	Consumers	NGO sector	Corporations	Press release	Own website	Own report	Peer-reviewed journal article	Detailed data available	Facebook	Twitter	Social media				
Food and nutrition																						
15. Food 2030 (39,40)	To support policies for a sustainable and healthy food supply in the UK.	U, I	Comparison to baseline	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
16. Food system report card (41)	To inform the development of policies for sustainable and healthy food supplies in the state of Iowa.	U, I	Data comparison over 10 years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
17. Obesity action award (42)	To stimulate and improve government policies to reduce obesity in Australia.	U, I	0–9	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
18. Obesity prevention state plan index (43)	To support state policies for the reduction of obesity in nine US states by supporting technical assistance, training and communications.	U, I	0–5 based on presence of and strength of the policy	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
19. A taste for change (44)	To inform and support policy recommendations to the UK government and food industry for comprehensive action on diet-related ill-health.	U, I	0–5	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
20. Malnutrition index (29)	To identify country performance in reducing the prevalence of stunting among infants.	U	% prevalence compared over time, countries ranked for size of improvement, with best 15 and worst 15 identified	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
21. World ranking food safety performance (45)	To identify strengths and weaknesses in Canada's food safety performance and to highlight policies to improve food safety.	U, I	Ranking based on country figures for each issue and a comparison to previous years	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
22. Commitments and practice of 25 companies (46)	To review the self-reported policies of food and drink companies in the light of the WHO global strategy on diet, physical activity and health.	I	Yes vs. No over 14 indicators	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
23. HFSS advertising restrictions final review (47)	To assess the effectiveness of restrictions on children's exposure to TV advertising for products that are high in fat, salt or sugar.	U	Exposure to HFSS vs. non-HFSS ads	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
24. Cereal facts 2012 (48)	To assess improvements in the nutritional quality of popular breakfast cereals, 2008–2011.	U	Score on a nutrient profiling index	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
25. Behind the brands (49)	To provide information on the top 10 food companies in order to hold companies to account for what happens in the supply chain.	I	1–10 per theme, scored as an overall percentage	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
26. Hunger and nutrition commitment index (50)	To measure the political commitment to reduce hunger and under-nutrition in developing countries.	I, S	Normalized indicator scores, weighted and averaged (also ranked and average of ranks)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
27. Access to nutrition index (51)	Assesses the nutrition-related commitments, performance and disclosure practices of 25 of the world's largest food and beverage manufacturers.	I, L, S	Indicators rated 1–10, combined into weighted averages for seven categories, totalled for final ranking	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

FCCD, full details of country compliance with each component of the index; FCTC, Framework Convention on Tobacco Control; FDS, full data set available to download; HFSS, high in fat, salt or sugar; I, implementation; IBFAN, International Baby Food Action Network; L, lobbying and advocacy; S, policy resources/spending; U, usage/exposure; WHO, World Health Organization.

In all examples, multiple channels of communication were found to be used, often tailored and targeted towards different stakeholders. In the examples shown, the outputs were targeted most commonly to policymakers, but also on occasion to academics, professionals or advocacy organizations. Publication was accompanied by media alerts and press releases to draw attention to a report's findings. Social media (e.g. Twitter and Facebook) are increasingly being used to supplement formal media and website publications. In no case was an estimation of the reach or impact available.

Additional means of dissemination include the publication of indices and ratings without a full background report, for example, when the background arguments and policies are assumed to be familiar to those viewing the index or rating, are easily found elsewhere, or when the index or rating is one of a series continuing an already-familiar trend.

Reports published on the websites of the public bodies or public interest organizations that produced the reports were usually freely available to download, but in some cases only freely available in a summary format.

It should be noted that the websites featuring the reports and tools gave few details of how the indices or ratings were used after their publication (e.g. through presentation in expert meetings, submission to consultations, cited in reports by other organizations, professional bodies). The websites generally provided no information on the effects that the reports have had on policy development or implementation, although those reports which examined trends in progress over time generally included some commentary on the forms of policy which were likely to influence those trends. One exception to this was a follow-up to the Oxfam report (tool no. 25) in which Oxfam cited the responses from the food companies they had assessed in their report in an online blog commentary from the Oxfam campaign coordinator (15).

Implications of the findings for INFORMAS

Developing INFORMAS indicators

As noted in the Introduction, the present paper is primarily concerned with examining the use and nature of performance indicators in public health to support the development of public health policy and to monitor and report on the extent of policy implementation. For INFORMAS, the proposed purpose of the indicators and ratings is to summarize progress and/or extent of implementation of public health policies and monitor the environments and behaviours that such policies create. The stated aims are to ensure a degree of transparency and accountability in government and corporate actions, to provide evidence of performance (positive or negative), to acknowledge success and leader-

Box 1 Key principles for the indicators to be used for INFORMAS

The INFORMAS indicators should:

- Be relevant to policy decisions
- Allow comparisons between categories, locations and/or over time
- Be easy to interpret
- Be quantifiable and replicable
- Be combinable into a composite score for rating or ranking
- Take account of trends, capacity and distributional concerns
- Be validated against relevant NCD risk factors, dietary behaviour or body mass index and their change over time
- Provide constructive opportunities for action by stakeholders

ship, and to maintain a 'demand' for continuing the promotion of public health through such policies (3).

From the reports examined, it is clear that a ratings/benchmarking approach is very commonly used, and previous approaches can provide guidance for INFORMAS. A summary of the key principles for the indicators to be used for INFORMAS is shown in Box 1.

There are, however, a number of limitations that must be considered when developing the INFORMAS approach. First, the different tools identified in this paper may not generalize across different audiences and contexts. For example, a low ranking may indicate a lack of political desire for change or a lack of capacity, or strong opposition to policies. Such contextual issues raise questions over the interpretation of rankings and ratings, and they will need to be addressed when the measures are being constructed, as well as being taken into account as they are monitored over time, and clearly described when reports are published and publicized. However, the expectation is that the process, benchmarks and ranking systems will provide a spur for those countries lagging in policy implementation.

Further, some scoring tools may be best constructed in the form of benchmarks for progress and/or extent of policy implementation rather than absolute measures of achievement. Just as health improvements need to be interpreted in the context of the health status prevailing at the time of monitoring, so INFORMAS' ratings of the healthfulness of food environments will need to be contextualized in terms of trends and changes over time. Thus, a simple indicator such as consumption of fruit and vegetables may be low in absolute terms but nonetheless improving rapidly from a lower base, thanks to a progressive policy for better consumption. In contrast, a higher level of consumption

may indicate a more traditional diet which is beginning to be undermined by factors such as the unregulated intensive marketing of energy-dense and nutrient-poor processed foods (16–18).

Lastly, it will be important to provide not only the score for a national indicator, but to take into account subnational scores (e.g. by state or province) if policies are predominantly developed and implemented at those levels and data are available at that level. Also, scoring patterns may differ considerably by location, reflecting population-level inequalities, for example between urban and rural populations, different ethnic population mixes or different educational or socioeconomic status (19–22).

INFORMAS media and communications strategy

A communications strategy for INFORMAS can be built around the learnings from other projects identified previously in this paper, with the intention of ensuring that data generated through INFORMAS can be effectively used to improve food environments, practices and policies.

In particular, we focus on the communication strategies that can be employed to frame and translate the key issues identified from the performance indicators to various audiences, including policymakers and the private sector.

Channels of communication that can be used as part of the INFORMAS outputs include expert consultations, appointed advisory boards and committees, ministerial or legislative briefings, scientific and peer-reviewed publications, conference and seminar presentations, research partnerships with government and various print, broadcast or digital media platforms. INFORMAS will utilize this influence to meet specific communication goals, such as those identified in Box 2.

Box 2 Communication goals for INFORMAS

The goals for INFORMAS communication are:

- To increase awareness among stakeholders, and set the policy agenda on improving food environments and reducing obesity, NCDs and their related inequalities
- To provide a platform for knowledge exchange and debate among all relevant stakeholders
- To stimulate policy research, evaluation and debate by policymakers, researchers, commercial stakeholders, the general news and trade media, and other public interest non-governmental organizations
- To stimulate action among policymakers, private sector and other policy implementers
- To build the INFORMAS brand so it is trusted and recognized among stakeholders.

A dedicated website hosted by the International Association for the Study of Obesity (IASO) and linked to other INFORMAS consortium partners' websites will be developed. Presently, information is available at <http://www.informas.org>. The INFORMAS site will be a source of material on the methodologies used for gathering information, and the data that accumulate as a result, and will be meta-tagged with key search terms to ensure the site is readily accessed by search engines.

For the purposes of policy support, INFORMAS intends to provide open access to the data it collects and the analyses it performs, which is common practice as shown in the majority of examples in Table 1. Material will be subject to the usual copyright restrictions which apply to analyses published in journals or other fee-charging publications. Primary data should be made available to non-INFORMAS researchers after a period of 2 years from first collection: this lag is intended to allow the original research team to undertake analyses, publish results, provide feedback to stakeholders and perform any tasks required by their funding bodies before making their data openly available.

The data, along with research results and links to published materials, will be published in a periodic report, produced by IASO. This will provide the summary ranking or rating of countries, and allow comparison of performance across different governments. Summary indices will also be publicized and disseminated through IASO's media channels and through INFORMAS partner media lists, including the members in INFORMAS membership bodies (IASO, Consumers International, the UK Health Forum, Corporate Accountability and others).

Targets of communication

The anticipated audience for the INFORMAS results are decision-makers in government and the private sector, academic communities, health professionals, non-governmental organizations, the media and the public. Table 2 provides a detailed summary of the anticipated communication and knowledge exchange approaches that should be considered by INFORMAS for each of these target audiences.

As Table 2 demonstrates, there is significant overlap between some of the key communication methods proposed, for instance the provision of an open-access data repository, the use of social media such as LinkedIn and Twitter and public news media. It is anticipated that information about the project findings will be published in appropriate peer-reviewed journals and newsletters, while a series of briefings and reports will be compiled and targeted to different stakeholder groups. In addition, workshops, presentations and symposia will be used to increase direct engagement with the target audiences at policy meetings, scientific conferences or events for healthcare professionals or the private sector.

Table 2 Approaches to different stakeholders and audiences for knowledge exchange

Communication target	Approaches
<p>Policymakers, including national policymakers and programme developers, local governments and health authorities, national agencies, political groups, policymakers in supranational bodies (e.g. World Health Organization regional bodies and other United Nations agencies). Include policymakers in planning, economic development, trading standards, social welfare, food purchasing as well as public health departments.</p> <p>Health professionals, including public health workers, health promotion specialists, public health nutritionists and researchers interested in the field of work covered by INFORMAS</p>	<ul style="list-style-type: none"> • Open-access information repository for receiving and displaying data, commentaries and reports • 'Evidence for policy' briefing papers and reports • Contributions to policy meetings (e.g. World Health Assembly, European Platform on Diet and Physical Activity, US Institute of Medicine panels) • Public news media • 'Evidence to action' workshops and symposia in conferences • Articles, editorials, commentaries in professional or policy-focused journals • News items in professional newsletters and bulletins • INFORMAS partners' policy-facing social media (e.g. LinkedIn, Twitter) • Information repository for receiving and displaying open-access data • Data summaries, presentation, commentaries and reports for public interest researchers • Articles and papers, editorials and commentaries in professional journals • Workshops, presentations and symposia at scientific conferences • News items in professional newsletters and bulletins • Briefing papers and reports • INFORMAS partners' professional-facing social media (e.g. LinkedIn, Twitter)
<p>Private sector companies and federated bodies in a range of relevant areas, including food and beverage companies, advertising companies, agricultural producers and trading companies, retailers and food service companies .</p>	<ul style="list-style-type: none"> • Company reports • Public news media • Articles, editorials, commentaries in professional journals • News items in professional newsletters and bulletins • Workshops and seminars for stakeholders • INFORMAS partners' corporate-facing social media (e.g. LinkedIn, Twitter)
<p>Non-governmental organizations (NGO) representing health, consumers, children and families, and also economic development and overseas aid.</p>	<ul style="list-style-type: none"> • Information repository for receiving and displaying data, commentaries and reports • Public news media • NGO network newsletters and bulletins • Funding agency newsletters and bulletins • Workshops and seminars • INFORMAS website material on open access • INFORMAS partners' professional-facing social media (e.g. LinkedIn, Twitter)
<p>General public via national and international public-facing media agencies.</p>	<ul style="list-style-type: none"> • Information repository for receiving and displaying data, commentaries and reports • INFORMAS website material on open access • Reports and report-cards • Media releases to news agencies and news services • INFORMAS partners press and media offices • INFORMAS partners' public-facing social media (e.g. LinkedIn, Facebook, Twitter)

It is anticipated that reports, including comparisons of country-level and company-level progress against global good-practice benchmarks, will be communicated directly to all stakeholders and to the media. Interim results will also be shared with named governments, named food companies and trade representative bodies in order to provide them with an opportunity to verify the data and to give feedback to the INFORMAS team. The process of feedback to governments and companies will be constructive and supportive of efforts to make changes to policies and actions. A balance in approach will need to be struck between providing monitoring information and supporting change on the one hand; and operating as an independent accountability system on behalf of the public on the other hand.

Conclusion

The communication element of the INFORMAS project sets out to bring the results to the attention of the relevant stakeholders concerned with the quality of food environments, including governments and their agencies, intergovernmental bodies, commercial and trade organizations, health professionals and public health and consumer advocacy organizations. In this paper, we have shown that a variety of approaches are being used to communicate results on health- and food-related environments, with different types of information collected and information disseminated through various media.

We have also attempted to identify some key components that should be taken into consideration when developing

indicators as part of INFORMAS. Namely, benchmarks should be policy relevant, quantifiable, reliable, valid and allow comparisons. However, the paucity of evaluations of the various approaches currently being used, and the lack of analysis of their effects on policy development, means that it has not been possible to assess the relative merits of different approaches. Furthermore, there are complications associated with the use of different approaches in different circumstances: it may be reasonable to compare different states within the United States with one another, or compare the practices of different formula milk manufacturers, but it would be less reasonable to compare small island nations with major industrial economies, or countries with a large range of subpopulations with countries that have relatively homogenous populations, or the actions of multinational corporations with those of localized, small-scale food suppliers.

A further concern that can overshadow the use of rankings and ratings to influence policy is the multiplicity of factors that may have an impact on policy development and implementation. For example, a food company may score highly based on an analysis of their corporate responsibility programme, such as their statements on developing nutritious products for low-income consumers, or their support for Millennium Development Goals, but they may also take part in political lobbying and make donations to policy research institutes which may also have an influence but might not be so easily measured (23). The information that is most easily obtained about a company is not necessarily the information that best summarizes the true position of the company and its policies.

INFORMAS will attempt to take account of these issues in their reports of food environments and the actions of public and private sector stakeholders. The composite scores will be developed, refined and reviewed with these concerns in mind, and will be responsive to comments and critiques from civil society. In order to improve the data, it is intended that all the base results will be reported and made freely available, subject to confidentiality, copyright and data protection constraints. In this way, it is hoped that INFORMAS outputs can be made an open resource for broad dissemination and widespread use.

Acknowledgements

The Rockefeller Foundation kindly supported the work of INFORMAS by hosting the first formal meeting of INFORMAS at the Rockefeller Foundation Bellagio Centre, Italy from 19 to 23 November 2012. The following organizations provided funding support for the travel of participants to Italy for this meeting and the preparation of background research papers: The Rockefeller Foundation, International Obesity Taskforce (IOTF), University of

Auckland, Deakin University, The George Institute, University of Sydney, Queensland University of Technology, University of Oxford, University of Pennsylvania Perelman School of Medicine, World Cancer Research Fund International, University of Toronto, The Australian National University. The authors would like to thank Francesco Branca and Godfrey Xuereb from the World Health Organization, and Janice Albert from the Food and Agriculture Organization for their participation in the first formal meeting of INFORMAS, and for their input into this paper. The Faculty of Health at Deakin University kindly supported the costs for open access availability of this paper, and the Australian National Health and Medical Research Council Centre for Research Excellence in Obesity Policy and Food Systems (APP1041020) supported the coordination and finalizing of INFORMAS manuscripts. Hannah Brinsden is supported by a grant from the UK Coronary Prevention Group.

Conflicts of interest

Bruce Neal is the Chair of the Australian Division of World Action on Salt and Health (2007–ongoing), was a Member of the Pepsico Global Scientific Advisory Board (2010–2012), was the Independent Adjudicator for the Australian Responsible Marketing to Children's Initiative (2009–2010) and holds funding from the Australian Food and Grocery Council as part of a National Health and Medical Research Council of Australia Partnership project (2010–2014). The other authors declare that they have no competing interests.

Supporting information

Additional Supporting Information may be found in the online version of this article, <http://dx.doi.org/10.1111/obr.12072>

Table S1. Detailed summary of tools used to monitor government performance to achieve specific public policy goals.

References

1. Lim SS, Vos T, Flaxman AD *et al.* A comparative risk assessment of burden of disease and injury attributable to 67 risk factors and risk factor clusters in 21 regions, 1990–2010: a systematic analysis for the Global Burden of Disease Study 2010. *Lancet* 2012; **380**: 2224–2260.
2. Moodie R, Stuckler D, Monteiro C *et al.* Profits and pandemics: prevention of harmful effects of tobacco, alcohol, and ultra-processed food and drink industries. *Lancet* 2013; **381**: 670–679.
3. Swinburn B, Sacks G, Vandevijvere S *et al.* International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support (INFORMAS): overview and key principles. *Obes Rev* 2013; **14** (Suppl. 1): 1–12.

4. McKinnon RA, Reedy J, Morrisette MA, Lytle LA, Yaroch AL. Measures of the food environment: a compilation of the literature, 1990–2007. *Am J Prev Med* 2009; 36: S124–S133.
5. Ohri-Vachaspati P, Leviton LC. Measuring food environments: a guide to available instruments. *Am J Health Promot* 2010; 24: 410–426.
6. Glanz K. Measuring food environments: a historical perspective. *Am J Prev Med* 2009; 36: S93–S98.
7. National Cancer Institute. *Risk Factor Monitoring and Methods*, 2012. [WWW document]. URL <https://riskfactor.cancer.gov/mfe/defining-measures-instruments-and-methodologies> (accessed 1 September 2013).
8. U.S. Department of Agriculture. *Your Food Environment Atlas*, 2012. [WWW document]. URL <http://www.ers.usda.gov/foodatlas/atlas/> (accessed 1 September 2013).
9. World Health Organization. *Comparative Analysis of Nutrition Policies in WHO European Member States*. WHO Regional Office for Europe: Copenhagen, 2003. [WWW document]. URL http://www.who.int/nutrition/publications/policies/comparative_analysis_european.pdf (accessed 1 September 2013).
10. Millstone E, Lobstein T. The PorGrow project: overall cross-national results, comparisons and implications. *Obes Rev* 2007; 8(Suppl. 2): 29–36.
11. Shill J, Mavoja H, Allender S *et al.* Government regulation to promote healthy food environments—a view from inside state governments. *Obes Rev* 2012; 13: 162–173.
12. Bostic C (ed.). *Tobacco Watch: Monitoring countries' performance on the tobacco treaty*. Framework Convention Alliance: Geneva, 2010. [WWW document]. URL http://www.fctc.org/images/stories/MONITOR_2010_WEB.pdf (accessed 1 September 2013).
13. Kean YJ, Allain A, Razak RA. *Breaking the Rules, Stretching the Rules* 2010. Penang: International Code Documentation Centre, International Babyfood Action Network, 2010. [WWW document]. URL http://www.ibfan.org/code_watch-reports.html (accessed 1 September 2013).
14. Lobstein T, Brinsden H, Landon J, Kraak V, Musicus A, Macmullen J. INFORMAS and advocacy for public health nutrition and obesity prevention. *Obes Rev* 2013; 14 (Suppl. 1): 150–156.
15. Woodhead A. *The Big 10 response to Behind the Brands, so far*. Oxfam Blog Channel GROW, posted 28 February 2013. [WWW document]. URL <http://blogs.oxfam.org/en/blogs/13-02-28-response-behind-brands-so-far> (accessed 1 September 2013).
16. Keding GB, Msuya JM, Maass BL, Krawinkel MB. Dietary patterns and nutritional health of women: the nutrition transition in rural Tanzania. *Food Nutr Bull* 2011; 32: 218–226.
17. Paalanen L, Prättälä R, Palosuo H, Laatikainen T. Socio-economic differences in the consumption of vegetables, fruit and berries in Russian and Finnish Karelia: 1992–2007. *Eur J Public Health* 2011; 21: 35–42.
18. Roos G, Johansson L, Kasmel A, Klumbiené J, Prättälä R. Disparities in vegetable and fruit consumption: European cases from the north to the south. *Public Health Nutr* 2001; 4: 35–43.
19. O'Dea K. Westernization and non-insulin-dependent diabetes in Australian Aborigines. *Ethn Dis* 1991; 1: 171–187.
20. Yu D, Zhang B, Zhao L, Wang H. Snacks consumption in Chinese children and adolescents at the ages of 3–17 years. *Wei Sheng Yan Jiu* 2008; 37: 710–713.
21. Barquera S, Hernández-Barrera L, Campos-Nonato I *et al.* Energy and nutrient consumption in adults: analysis of the Mexican National Health and Nutrition Survey 2006. *Salud Publica Mex* 2009; 51(Suppl. 4): S562–S573.
22. Ong H, Meng M, Wei L, Xiawei Z, Wang MC. Chinese children at a crossroads: influence of family socioeconomic factors on diet patterns. *Ecol Food Nutr* 2010; 49: 247–261.
23. Chatterji A, Toffel M. What Green Rankings Don't Tell You. *The Daily Beast*, 22 Oct 2012. [WWW document]. URL <http://www.thedailybeast.com/newsweek/2012/10/22/green-rankings-what-sustainability-reports-don-t-tell-you.html> (accessed 1 September 2013).
24. World Health Organization. *2012 global progress report on implementation of the WHO framework convention on tobacco control*. World Health Organization: Geneva, 2012.
25. Australian Council on Smoking and Health. *National Tobacco Control Scoreboard*, 2010. [WWW document]. URL <http://www.acosh.org/campaigns/national-tobacco-control-scoreboard/> (accessed 1 September 2013).
26. American Lung Association. *State of Tobacco Control 2013 Report*. New York, NY, 2013. [WWW document]. URL <http://www.stateoftobaccocontrol.org/> (accessed 1 September 2013).
27. World Health Organization. *Global status report on alcohol and health*. WHO: Geneva, 2011. [WWW document]. URL http://www.who.int/substance_abuse/publications/global_alcohol_report/en/ (Accessed 1 September 2013).
28. Save the Children. *Breastfeeding Policy Scorecard for Developed Countries*, 2012. [WWW document]. URL www.savethechildrenweb.org/SOWM2012Interactive/sowm2012_2/ (accessed 1 September 2013).
29. Save the Children. *Surviving the first day: State of the World's Mothers 2013*. Westport, CT and London, UK, 2013. [WWW document]. URL <http://www.savethechildrenweb.org/SOWM-2013/> (accessed 1 September 2013).
30. International Baby Food Action Network. *Complying with the International Code of marketing Breastmilk Substitutes and subsequent WHA resolutions. A Guide for Regulators and Compliance Staff*, October 2012. [WWW document]. URL <http://www.ibfan.org/code-publications.html> (accessed 1 September 2013).
31. International Baby Food Action Network. *State of the Code by Country 2011*. IFBAN: Penang, Malaysia, 2011.
32. International Baby Food Action Network. *State of the Code by Company 2009*. IFBAN: Penang, Malaysia, 2009.
33. Centers for Disease Control and Prevention. *Breastfeeding Report Card – United States, 2012*. Atlanta, GA: Department of Health and Human Services, August 2012. [WWW document]. URL <http://www.cdc.gov/breastfeeding/data/reportcard.htm> (accessed 1 September 2013).
34. United Nations Children's Fund (UNICEF). *Child poverty in perspective: An overview of child well-being in rich countries*. Innocenti Report Card 7, 2007. UNICEF Innocenti Research Centre, Florence: UNICEF, 2007. [WWW document]. URL <http://www.unicef.org/media/files/ChildPovertyReport.pdf>. (accessed 1 September 2013).
35. Annie E Casey Foundation. *State trends in child well being. Kids count data book 2012*. Annie E. Casey Foundation: Baltimore, MD, 2012. [WWW document]. URL <http://datacenter.kidscount.org/DataBook/2012/OnlineBooks/KIDSCOUNT2012DataBookFullReport.pdf> (accessed 1 September 2013).
36. Alliance for Biking and Walking. *Bicycling and Walking in the United States: 2012 Benchmarking Report*, January 2012. [WWW document]. URL http://www.peoplepoweredmovement.org/site/index.php/site/memberservices/2012_benchmarking_report/#findings (accessed 1 September 2013).
37. American College of Sports Medicine. *American Fitness Index: Actively Moving America to Better Health. Health and Community Fitness Status of the 50 Largest Metropolitan*

- Areas, 2013. [WWW document]. URL <http://www.americanfitnessindex.org/report.htm> (accessed 1 September 2013).
38. Sports Science Institute of South Africa. *Healthy Active Kids South Africa Report Card 2010. Report card on the physical activity, nutrition and tobacco use for South African children and youth*. PLACE: Sports Science Institute of South Africa, 2010. [WWW document]. URL <http://www.globalpa.org.uk/downloads/healthy-active-kids-report-2010.pdf> (accessed 1 September 2013).
39. Lang T, Dibb S, Reddy S. *Looking Back, Looking Forward. Sustainability and UK Food Policy 2000–2011*. London: Sustainable Development Commission, 2011. [WWW document]. URL http://www.sd-commission.org.uk/data/files/publications/FoodPolicy10_Report_final_w.pdf (accessed 1 September 2013).
40. HM Government. *Food 2030*. London: Department for Environment, Food and Rural Affairs, 2010. [WWW document]. URL <http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy.pdf> (accessed 1 September 2013).
41. Tagtow AM, Roberts SL. *Cultivating Resilience: A Food System Blueprint that Advances the Health of Iowans, Farms and Communities*. Iowa Food Systems Council, February 2011. [WWW document]. URL <http://www.iowafoodsystemscouncil.org/cultivating-resistance/> (accessed 20 April 2013).
42. Martin J, Peeters A, Honisett S, Mavoia H, Swinburn B, de Silva-Sanigorski A. Benchmarking government action for obesity prevention – an innovative advocacy strategy. *Obes Res Clin Prac* 2013; online early 2 August 2013. <doi:10.1016/j.orcp.2013.07.001>
43. Dunět DO, Butterfoss FD, Hamre R, Kuester S. Using the State Plan Index to evaluate the quality of state plans to prevent obesity and other chronic diseases. *Prev Chronic Dis* 2005; 2: A10 epub.
44. Which? *A taste for change? Food companies assessed for action to enable healthier choices*. London: Which?, 2012. [WWW document]. URL <http://www.which.co.uk/documents/pdf/a-taste-for-change---which-briefing---responsibility-deal-305379.pdf> (accessed 1 September 2013).
45. Charlebois S, MacKay G. World Ranking 2010 Food Safety Performance. Regina/Saskatchewan: Johnson-Shoyama graduate school of public policy, 2010. [WWW document]. URL http://www.schoolofpublicpolicy.sk.ca/_documents/_publications_reports/food_safety_final.pdf (accessed 1 September 2013).
46. Lang T, Rayner G, Kaelin E. *The Food Industry, Diet, Physical Activity and Health: A Review of Reported Commitments and Practice of 25 of the World's Largest Food Companies*. London: City University Centre for Food Policy, 2006. [WWW document]. URL http://archive.oxha.org/knowledge/publications/lang_foodindustry_april2006.pdf (accessed 1 September 2013).
47. Ofcom. *HFSS advertising restrictions, Final review*. London: Ofcom, 2010 [WWW document]. URL <http://stakeholders.ofcom.org.uk/binaries/research/tv-research/hfss-review-final.pdf> (accessed 1 September 2013).
48. Harris JL, Schwartz MB, Brownell KB *et al*. *Cereal FACTS 2012: Limited progress in the nutrition quality and marketing of children's cereals*. New Haven: Rudd Centre for Food Policy, 2012. [WWW document]. URL http://www.cerealfacts.org/media/Cereal_FACTS_Report_2012_7.12.pdf (accessed 1 September 2013).
49. Oxfam. *Behind the brands, Company scorecard*, 2013. [WWW document]. URL <http://www.behindthebrands.org/en/company-scorecard> (accessed 1 September 2013).
50. Lintelo DT, Haddad L, Lakshman R, Gatellier K. *The hunger and nutrition commitment index (HANCI 2012)*. Institute for Development Studies: Brighton, 2013. [WWW document]. URL http://www.ids.ac.uk/files/dmfile/HANCI_2012_reportv2.pdf (accessed 1 September 2013).
51. Access to Nutrition Index. *Global index 2013*. ATNI: The Hague, 2013. [WWW document]. URL <http://www.accessstonutrition.org/home> (accessed 1 September 2013).