

Evaluation of the implementation of governmental policies and actions to create healthy food environments in Burkina Faso

Viviane Aurélie TAPSOBA¹, Ella W. R. COMPAORE¹, Augustin Nawidimbasha ZEBA², Jerome Winbetourefa SOME², Julien Soliba MANGA³, Adama DIOUF⁴, Jean-Claude MOUBARAC³, Stefanie VANDEVIJVERE⁵ and Mamoudou H. DICKO¹

¹ Universite Joseph KI ZERBO, Burkina Faso

² Health Sciences Research Institute, Burkina Faso

³ Universite de Montréal, Canada

⁴ Universite Cheikh Anta Diop de Dakar, Sénégal

⁵ Sciensano, Belgium

Financial Support: The project was funded by the international development research center.

Corresponding author: Viviane Aurélie TAPSOBA, Joseph KI ZERBO University, Burkina Faso. E-mail: viviane.tapsoba@ujkz.bf

Acknowledgements: The Food-EPI Burkina Faso research team would also like to thank the International Development Research Centre (IDRC) for its support. The implementation of this research project is the result of a collaborative effort between



This is an Accepted Manuscript for Public Health Nutrition. This peer-reviewed article has been accepted for publication but not yet copyedited or typeset, and so may be subject to change during the production process. The article is considered published and may be cited using its DOI 10.1017/S1368980024002568

Public Health Nutrition is published by Cambridge University Press on behalf of The Nutrition Society. This is an Open Access article, distributed under the terms of the Creative Commons Attribution licence (<http://creativecommons.org/licenses/by/4.0/>), which permits unrestricted re-use, distribution and reproduction, provided the original article is properly cited.

the Université Joseph Ki Zerbo (UJK), the Institut de Recherche en Sciences de la Santé (IRSS), the Ministry of Health and Public Hygiene of Burkina Faso, the Université Cheick Anta Diop de Dakar (UCAD), the Department of Nutrition at the Université de Montréal (UdeM), the Ministry of Health and Public Hygiene in Burkina Faso, the SCIENSANO in Belgium and the INFORMAS network. Many thanks to the national panel of experts from government institutions, teaching and research institutions, civil society organizations and United Nations organizations who took part in the evaluation.

Conflict of Interest: The authors declare that they have no conflict of interest.

Authorship: AD, JCM, SV, JSM, ANZ and EWRC designed the research project. VAT, ANZ, EWRC, AD, JCM, SV, JSM, JWS and DHM contributed to the implementation of the research project. VAT collected and analysed the data. VAT, AD, JCM, SV, JSM, EWRC, ANZ, JWS, and DHM directed the writing of this manuscript. All authors read and approved the final manuscript. This study was reviewed and approved by the Burkina Faso Health Research Ethics Committee by deliberation no 2021-04-112. Informed consent was obtained from all.

Ethical Standards Disclosure: This study was examined and approved by the Burkina Faso health research ethics committee by deliberation No. 2021-04-112. To facilitate data collection, an administrative letter was drawn up by the ministry of health through the technical secretariat in charge of multisectoral nutrition (ST/Nut) and sent by post to all the ministries concerned. All the ministries and stakeholders involved in nutrition were informed of the purpose of the study. Ethical considerations were taken into account by respecting the anonymity of the actors who provided documents on nutrition policies.

ABSTRACT

Objective:

The creation of a healthy food environment is highly dependent on the policies that governments choose to implement. The objective of this study is to compare the level of implementation of current public policies aimed at creating healthy food environments in Burkina Faso with international good practice indicators.

Design:

This evaluation was carried out using the Food-EPI tool. The tool has 2 components (policy and infrastructure support), 13 domains and 56 good practice indicators adapted to the Burkina Faso context.

Setting:

Burkina Faso

Participants:

Expert evaluators divided into two groups: the group of independent experts from universities, NGOs and civil society, and the group of experts from various government sectors.

Results:

Among the 56 indicators, it was assessed the level of implementation as "high" for 6 indicators, "medium" for 24 indicators, "low" for 22 indicators and "very low" for 4 indicators. High implementation level indicators include strong and visible political support, targets on exclusive breastfeeding and complementary feeding, strong and visible political support for actions to combat all forms of malnutrition, monitoring of exclusive breastfeeding and complementary feeding indicators, monitoring of promotion and growth surveillance programs and coordination mechanism (national, state and local government). The indicators on menu labelling, reducing taxes on healthy foods, increasing taxes on unhealthy foods and dietary guidelines are the indicators with a "very low" level of implementation in Burkina Faso.

Conclusions:

The general results showed that there is a clear need for further improvements in policy and infrastructure support to promote healthy food environments.

Keywords:

food system, food environment, public policies, policy implementation, Food-EPI.

1. Introduction

The burden of undernutrition remains a real public health problem in low- and middle-income countries. The progress for improving the World Health Assembly nutrition targets is slow, making it difficult to achieve the Sustainable Development Goal (SDG) 2 by 2030^(1,2). Added to this, is a new threat of over-nutrition in these countries, which is becoming apparent⁽³⁾. This trend is due to changes in dietary practices and energy expenditure that coincide with economic development, demographic transition and epidemiological change in the population, also known as nutritional transition. These changes have contributed to an increase in diet-related chronic diseases^(4,5). Every individual should have the right to obtain healthy food that is easily accessible and available, relatively inexpensive and sufficiently promoted. However, in general, ultra-processed foods are increasingly dominating markets, making food environments more unhealthy, and profoundly multiplying their effects on health^(6,7).

Food environments, more generally, consist of a combination of physical, economic, political and socio-cultural environments, opportunities and conditions that influence food choices⁽⁸⁾. To combat dietary risk factors, government policies aimed at supporting healthy food environments must be implemented⁽⁹⁻¹¹⁾. A healthy food environment ensures that healthy foods are available, affordable and acceptable, which is an important determinant of improved food consumption by the population⁽¹²⁾.

Evidence of the effectiveness of public policies in favor of healthy eating has grown considerably in recent years, but their implementation remains very uneven from one country to another⁽¹³⁻¹⁵⁾. The ability of governments to adopt optimal and constructive environmental food policies requires analysis of their policies compared to internationally recommended good practice⁽¹⁶⁾. However, this type of research is limited on a global scale and has not yet been implemented in Burkina Faso. Several landmark events, such as the launch of the United Nations (UN) Scaling Up Nutrition movement in 2010 and the acceptance of the Sustainable Development Goals in 2015, have set out a coherent international vision for ending malnutrition

^(1,17). However, it is less clear how this vision manifests itself in reality and translates into effective action within Burkina Faso's nutrition program.

At international level, a number of approaches for the comprehensive assessment of the level of implementation of nutrition policies have been proposed ^(12,18,19). One of the most widely used approaches is the Healthy Food Environment Policy Index (Food-EPI) which was developed by International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support (INFORMAS) ^(8,12). It is a global network of researchers and public interest organizations that aims to monitor, compare and support public and private sector actions to support healthy food environments and reduce obesity and non-communicable diseases and associated inequalities ⁽⁸⁾.

To date, the Food-EPI has been implemented in some forty 40 countries around the world, however, no study has been carried out to assess the extent to which actions aimed at creating healthy food environments have been implemented to prevent all forms of malnutrition and non-communicable diseases in Burkina Faso ⁽²⁰⁾. The quality of food environments is a key factor in the nutritional quality of people's diets, but food environments are not regularly monitored and the implementation of most policies relating to these food environments is slow and inadequate. The Food-EPI methodology was funded in Burkina Faso by the international development research center. The objective of this study is to assess the level of implementation of public nutrition policies in Burkina Faso compared with international good practice, with a view to proposing actions that will be recommended to the government to promote healthy environments in Burkina Faso.

2.Methodology

This study used the Healthy Food Environment Policy Index (Food-EPI), to analyse food environment policies ^(8,12).

The Food-EPI module analyzes the level of implementation of public policies and government actions in Burkina Faso ^(8,21). The implementation of Food-EPI in Burkina Faso will enable the development of an upstream evidence report, validated by all ministries and actors involved in nutrition, which will serve as a basis for assessing the level of implementation of public policies and government actions

compared to international good practice ⁽²²⁾. The level of coherence was verified and a reliability score was calculated using the intra-class correlation coefficient by Microsoft Excel.

2.1. The Food-EPI tool

The Food-EPI tool consists of a "policy" component with domains that address specific aspects of food environments and an "infrastructure support" component with domains that strengthen systems for preventing malnutrition and food-related NCDs. It was adapted to the Burkinabe context by the research team in charge of implementing the tool in the country, by consulting the original Food-EPI protocol ⁽⁸⁾. The original 47-indicator tool has undergone some modifications: two existing indicators associated with food retailing and one health indicator in all policies have been removed. These were the following indicators: The government ensures that existing support systems are in place to encourage food retailers to promote the in-store availability of healthy foods and to limit the in-store availability of unhealthy products; The government ensures that existing support systems are in place to encourage food retailers to increase the promotion and availability of healthy foods and decrease the promotion and availability of unhealthy foods; Processes exist (e.g. health impact assessments) to evaluate and consider health impacts when developing other non-food policies. Following adaptation of the tool in Senegal and other African countries (Kenya, Rwanda, Tanzania) to take account of the double burden of malnutrition ⁽²³⁾, 12 new indicators have been added, relating to breastfeeding and complementary feeding, regulations on the marketing of breast milk substitutes (BMS), national policies to combat overweight, NCDs and undernutrition, health systems (growth monitoring), hygiene, water and sanitation (WASH) indicators, food retailers and traders (hygiene and sanitation) and health safety (microbial and chemical contamination) ^(24,23).

The version of the Food-EPI tool used in Burkina Faso includes 56 indicators grouped into thirteen policy and infrastructure support domains (Figure 1).

2.2. Developing and validating the evidence document

For each of the 56 indicators on food environments in the Food-EPI tool, evidence of their implementation in Burkina Faso was collected from July to December 2020,

followed by an update of the information up to December 2022. Data was compiled through physical and virtual interviews and online searches of government websites and databases, policy documents and non-government websites. The data were then compiled and classified according to policy, strategic and operational frameworks, to facilitate its use in the compilation of indicators.

Thus, all government policies and actions identified in Burkina Faso relating to the creation of healthy food environments were used to fill in the 56 indicators and produce the evidence document. The evidence document was sent to all the members of the "multisectoral nutrition management" functional team, which is a government group that includes the focal points of all the ministries and stakeholders involved in nutrition. These include health, agriculture, livestock and fisheries, finance, social protection, trade, nutrition, water, hygiene and sanitation, education and research sectors. Precisely, the evidence document was sent to 51 experts; however, 35 of them attended the validation workshop of the document, resulting in a participation rate of 68.6%. These actors gave their opinion on the evidence for each indicator by including new evidence and suggesting other government websites that we researched, also adding the actors' recommendations to ensure the completeness of the evidence obtained. After validation of the evidence document, examples of international good practice (benchmarking) for each indicator were integrated. These international practices are promising practices in which certain governments have taken measures or implemented policies to promote healthy food environments. The selection of these examples of international good practice was based on a consensus collection produced by INFORMAS and updated within the Network ^(12,21).

2.3. Assessment of the implementation of existing public policies and government actions in relation to international good practice

The assessment of the level of implementation of public policies and government actions took the form of a workshop in accordance with the Food-EPI process ⁽¹²⁾. The workshop was held over two days in Burkina Faso and brought together a number of evaluators from academia, civil society, the United Nations and various government sectors. Through the ministry of health's technical secretariat for multisectoral nutrition coordination, a group of experts was carefully selected and

invited to take part in the workshop to assess public policies and government action on food environments in the country. These expert evaluators were chosen on the basis of their expertise in public health or nutrition. A total of 25 experts from various government sectors and 14 experts from universities, civil society, non-governmental organizations and the United Nations system (independent experts) took part in the workshop. By involving government stakeholders in the public policy evaluation process, the aim was to promote a participatory approach and subsequent ownership of the results and improve the future implementation of the priority actions recommended by all the experts at the end of the exercise.

Before the workshop, the expert evaluators received the invitations to the evaluation workshop at the same time as the evidence document to be reviewed 2 weeks before the day of the workshop to facilitate the rating process.

During the workshop, the experts were first given a short briefing on the Food-EPI tool and the evaluation methodology. Then, after anonymizing each evaluator's physical rating sheets, clarifications were made to harmonize understanding for each indicator. These discussions enabled the experts to assess the 'quality' of government policies and the extent to which they were implemented locally. Finally, current evidence of the Burkinabe government's implementation of each indicator was presented, followed by examples of international good practice for comparison. The experts gave an individual implementation rating for each indicator using a Likert scale of 1 to 5, taking into account the evidence presented and their own informed judgement. At the end of the workshop, evaluation scores were assigned to the fifty-six indicators selected in Burkina Faso.

The meaning of the scale is:

1. <20% implementation compared to international best practice;
2. 20 to 40% implementation compared with international best practice;
3. 40-60% implementation compared with international best practice;
4. 60-80% implementation compared with international best practice;
5. 80-100% implementation compared with international best practice.

NB: the score 0 (not to be evaluated) was given only when the indicator could not be evaluated.

A score of 1 means that implementation is between 0% and 20% of international best practice, and a score of 5 means that implementation is between 80% and 100% of international best practice.

2.4. Analysis

The anonymous evaluation scores for the 56 indicators were manually entered into an Epi Info 7 program (Epi Info™, CDC Atlanta, USA) software and descriptive statistics were generated using Microsoft Excel®. The average evaluation score for each good practice indicator was used to determine an overall level of implementation for each group, based on the Likert scale ranging from 1 to 5 and corresponding to a level of "1= very low", "2= low", "3= medium", "4= high" and "5= very high". A "6= cannot" assess option was included for those who felt they lacked sufficient evidence to make a decision. In addition, the experts were also able to comment on their marks on the score sheets.

Differences in ratings based on expert function, *i.e.* governmental versus non-governmental, were tested and inter-rater reliability agreement between these two groups of participants was assessed using the intra-class correlation coefficient.

3. Results

3.1. Participation and reliability of the evaluation

The evaluation workshop had a participation rate of 63.9%, in fact, of the 61 expert evaluators invited, 39 took part in the evaluation workshop, *i.e.* Group A (independent experts, n= 14) and Group B (government experts, n = 25). The gender distribution of expert evaluators shows that men were more represented, with 28 men against 11 women. The level of consistency of the assessments made by all the evaluators indicates a reliability score for all the evaluators of 0.96 (95% CI; 0.94 - 0.97). The inter-rater reliability score was higher in group B of government experts at 0.95 (95% CI 0.93 - 0.97) than in group A of independent experts at 0.87 (95% CI 0.80 - 0.92).

3.2. Level of implementation of existing public policies and government actions compared to international good practice

A document on local evidence of existing public policies and government actions was compiled and then reviewed and validated by all ministries and stakeholders

involved in nutrition. This evidence document served as a reference for assessing the level of implementation of public policies on food environments. The level of implementation of local good practice indicators compared to international good practice, was assessed by the independent and governmental expert groups (Figure 2).

Of the 56 good practice indicators in the Food-EPI tool in Burkina Faso, the level of implementation was rated as “very low” for 4 (7.1%) indicators, “low” for 22 (39.2%) indicators, “medium” for 24 (42.8%) indicators, and “high” for 6 (10.7%) indicators. Finally, there were no indicators rated as “very high”.

Specifically, based on each component, out of the 26 policy indicators, the level of implementation was rated as “very low” for 3 (11.5%) indicators, “low” for 14 (53.8%), and “medium” for 9 (34.6%) indicators. However, there were no indicators rated with a “high” or “very high” level of implementation.

For the 30 indicators of the infrastructure support component, the level of implementation was rated as “very low” for 1 (3.3%) indicator, “low” for 8 (26.6%) indicators, “medium” for 15 (50%) indicators, and “high” for 6 (20%) indicators.

The lowest scores were observed among indicators, namely: (i) menu labelling, (ii) tax reduction on healthy food; (iii) price increase on unhealthy food and (iv) food leadership implemented. The highest scores were observed for 6 indicators, namely: (i) strong and visible political support; (ii) targets for exclusive breastfeeding and complementary feeding; (iii) strong and visible political support for actions to combat all forms of malnutrition; (iv) breastfeeding and complementary feeding indicators monitored; (v) growth promotion surveillance and monitoring programs and (vi) coordination mechanisms (national, state and local government) (Figure 2).

It should be noted that, of all the indicators with a “very low” level of implementation cited, all were part of the initial Food-EPI tool, and none of them concerned the new indicators on the double burden of malnutrition.

Of the six (06) indicators assessed as “high”, four (4) are part of the new indicators on the double burden of malnutrition.

Among the six (06) indicators with a “high” level of implementation, four (4) are part of the new indicators on the double burden of malnutrition, namely those relating to

(i) the objectives of exclusive breastfeeding and complementary feeding, (ii) strong and visible political support for actions aimed at combating all forms of malnutrition, (iii) the indicators on breastfeeding and complementary feeding monitored and (iv) the surveillance program and the monitoring of growth promotion. The other two indicators rated with a "high" level of implementation, relating to (i) strong and visible political support and (ii) coordination mechanisms (national, state and local government), are indicators from the initial Food-EPI tool.

It is worth noting that, of the 56 indicators, 22 (39.2%) were evaluated differently by the two groups of experts. The government experts have had a tendency to assign higher ratings than the independent experts.

Of these differently rated indicators, 4 were rated with a "high" level of implementation by the government experts, while for the independent experts these indicators were rated with a "medium" level of implementation; 11 indicators were rated with a "medium" level of implementation by the government experts, while for the independent experts these indicators were rated with a "low" level of implementation; 4 others were rated with a "low" level of implementation by the government group, while for the independent experts these indicators were rated with a "very low" level of implementation. However, the main disparity between the two groups concerned LEAD indicator 6: National breastfeeding policy. This indicator was rated as "average" by the group of government experts, compared with implementation ratings of "high" by the group of independent experts (Table 1).

4. Discussion

4.1. Participation and reliability

In this survey, among 61 invited expert evaluators, 63.9% were in nutrition specific areas. Among the 40 countries that have implemented this study, this rate of participation by evaluators is higher than that of the majority of countries where the study has been carried out. For example, evaluations of the level of implementation of Food-EPI in Chile, Senegal, Ghana, Singapore, Kenya, Mexico and South Africa recorded participation rates ranging from 28% to 46% ^(14,25-27).

This high level of participation could be explained by the fact that this study was conducted by the Technical Secretariat for Multisectoral Nutrition (ST-Nut) through

the Ministry of Health, which made a major contribution to assembling a very wide diversity of important nutrition actors.

4.2. Analysis of the level of implementation of public policies and government actions in Burkina Faso

Analysis of the level of implementation of public policies and government actions using the Food-EPI tool reveals the strengths and weaknesses of the nutrition policy landscape in Burkina Faso.

Using the same Food-EPI tool, the result obtained in Senegal showed that 48% of the good practice indicators in the 'policy' component had a 'very low' level of implementation, and in Kenya this was the case for 12.5% ^(25,27). On the other hand, in Ghana, the implementation of none of the good practice indicators in the "policy" component was rated as "very low" ⁽²⁶⁾. However, the country with the best Food-EPI assessment result is Chile in South America, whose implementation of 13% of the good practice indicators in the "policy" component was rated "high" in relation to international good practice ⁽¹⁴⁾. In Ghana, only one indicator was assessed with a "high" level of implementation, while in both Senegal and Burkina Faso in this study, no indicator was assessed with a "high" level of implementation for the policy component ^(26,27).

In comparison with Senegal, 91% of the indicators in the infrastructure support component were assessed with a "low" level of implementation ⁽²⁶⁾. This percentage was 86% in Kenya and 65% in Ghana ^(25,26). In these three countries, the proportions of good practice indicators with an "average" level of implementation were 30% in Ghana, 13.6% in Kenya and 4.5% in Senegal, compared with 50% in Burkina Faso. 20% of the infrastructure support indicators in Burkina Faso received a 'high' implementation rating, 4.5% in Senegal, and none of the indicators in Ghana received a 'high' implementation rating in this component.

Overall, in Burkina Faso, the majority of indicators, 53.5% (30 out of 56 indicators), rated as medium and high in terms of implementation mainly concerned infrastructure support indicators. These results are similar to those of New Zealand, where 46% of indicators were rated as medium and high in terms of implementation.

However, these figures are significantly higher than those of many low- and middle-income countries such as Ghana and Kenya, which respectively recorded more good practice indicators with an "average" level of 22% and 10.5%. As for Senegal, only one indicator (policy support for nutrition) was ranked with an "average" level of implementation. It is also worth noting that in a high-income country such as England, Germany and Italy, none indicator has been given a "high" implementation score ^(14,28).

In Burkina Faso, therefore, indicators relating to infrastructure support systems have been implemented to a greater extent than policies directly linked to improving the food environment. This weak implementation of the policy component in the country can be characterized by the absence of regulations and restrictions on unhealthy foods, particularly with regard to food composition, food labelling, food promotion, food prices, food retailing, trade and investment agreements. Added to this, there are no dietary guidelines to guide individual choices and institutional interventions at population level ⁽²⁹⁾. However, the high performance in the infrastructure support component such as monitoring and evaluation, leadership, coordination platforms and synergy opportunities may reflect a governance effort in the Burkina Faso system.

It is interesting to note that in the early days of the Food-EPI tool, it was developed with a particular focus on the prevention of obesity and diet-related non-communicable diseases. However, many countries, including Burkina Faso, are increasingly faced with the complex challenge of the double burden of malnutrition, characterized by the coexistence of undernutrition (including wasting, stunting and deficiencies in important micronutrients) with overweight, obesity or diet-related non-communicable diseases (NCDs). As a result, this tool does not take into account these and other nutrition-related policy areas, such as undernutrition, micronutrient deficiencies, breastfeeding, breast-milk substitutes, genetically modified organisms, food security and policies related to climate change, and has led to the addition of new indicators of the double burden of malnutrition in order to adapt to all countries. The implementation of these indicators has been better rated, because for many years, the majority of interventions in Burkina Faso have focused on the problems of

undernutrition. Very few interventions addressed the problems of obesity and diet-related NCDs. However, in recent years in Burkina Faso, with the prevalence of obesity becoming increasingly noticeable^(30,31), there have been a growing number of initiatives to combat all forms of malnutrition in the country.

This study has revealed that the independent and government expert groups have made different assessments of the level of policy implementation and infrastructure support for creating healthy food environments in Burkina Faso. Indeed, any disparity would probably be due to their different functions^(32–34). The government experts' experience and knowledge of the situation in terms of implementation "on the ground" may have influenced their point of view during the rating, however, this could also be explained by the high mobility of the actors, which could have led to a change from one actor who participated in the beginning of the process of implementing the Food-EPI tool in the country to another actor, as well as the potential bias associated with their position of responsibility^(32,34,35).

But while government actors were generally more positive about the government's performance in implementing policies than independent actors for the majority of indicators, there was a distinct paradox in the rating of LEAD indicator 6: National breastfeeding policy. For this indicator, the government experts rated the level of implementation as "medium", whereas the independent experts rated it as "high". This could be explained by the fact that the government considers that, in addition to the satisfying prevalence data for infant and young child feeding in Burkina Faso, efforts still need to be made on this indicator, especially with regard to the regulatory provisions on leave for parents working in the public sectors, which are well implemented in the non-government sectors.

Compared with the results of other countries that have implemented the Food-EPI process, the research shows that Burkina Faso is performing relatively well in terms of food policy, but further action is needed to achieve the level of progress demonstrated by other governments worldwide. The level of public policy implementation and government action attained in Burkina Faso suggests that the political landscape is favorable to the creation of healthy food environments. Indeed, the results of the international comparative analysis indicate that, in certain policy

areas, Burkina Faso has solid, institutionalized structures in place to promote healthy eating. This applies, among other things, to seven indicators with a "high" level of implementation.

Firstly, the high score given to strong and visible political support can be explained by a number of points, such as Burkina Faso's membership of the UN Scaling Up movement in 2011, the adoption of the national multisectoral nutrition policy (2020-2029) and its strategic plan (2020-2024), the raising of the level of institutional anchoring of nutrition at the Presidency of Faso and the setting up of the national information platform for nutrition ^(17,36-39).

For the exclusive breastfeeding and complementary feeding targets, Burkina Faso has a plan for scaling up the promotion of optimal infant and young child feeding practices (2013-2025), adopted in 2013 to build a platform of multisectoral interventions aimed at reducing stunting in children under 5 by 40% by 2025.

Strong and visible political support for actions aimed at combating all forms of malnutrition: for this indicator, in terms of implementation, there is the multisectoral strategic plan for nutrition in Burkina Faso, which sets out specific nutrition interventions that act on the immediate causes with an exclusively nutritional objective. In addition, the nutrition department of the ministry of health plays a major role in this indicator. This structure is responsible for implementing interventions to prevent and treat malnutrition, promoting good nutritional practices, carrying out nutritional surveys and supplying nutritional inputs.

Secondly, with regard to the indicators on breastfeeding and complementary feeding, the high score accorded to this indicator is explained in part by the adoption in 2013 of the plan for scaling up the promotion of optimal infant and young child feeding practices (2013-2025). This plan makes it possible to monitor breastfeeding and complementary feeding indicators. In addition, the ministry of health, through the nutrition department, conducts an annual national nutrition survey using the SMART methodology. This survey provides annual results on the rate of exclusive breastfeeding among children aged under 6 months and the rate of minimum acceptable food intake among children aged between 6 and 23 months. The prevalence of infant and young child feeding data, and promotion interventions

implemented on ground by health systems and NGOs shows that public policies on exclusive breastfeeding and complementary feeding are effective in Burkina Faso. Concerning the indicator on growth promotion monitoring and follow-up programs, in Burkina Faso the ministry of health, through the department of nutrition, carries out an annual national nutrition survey using the SMART methodology. This survey provides regular monitoring and annual results on the rate of childhood overweight/obesity and undernutrition in children under 5. Secondly, data from the ministry of health's statistical yearbook is used to monitor growth promotion. Moreover, monitoring the promotion of child growth and development is a routine activity in health facilities.

Finally, with regard to coordination mechanisms (national, state and local government), this indicator received a high score, probably because Burkina Faso joined the UN Scaling up Nutrition movement in 2010, with the task of coordinating sectors, setting up a multi-sector platform and monitoring nutrition-specific and sensitive indicators. Added to this is the fact that since 2014, Burkina Faso has launched nutritional planning as part of a multisectoral approach involving six sectors ⁽⁴⁰⁾. This has subsequently led to the institutional anchoring of nutrition at the Presidency of Faso, adopted by the Council of Ministers on 14 July 2021, and the Technical Secretariat responsible for multisectoral nutrition coordination was moved to the office the President ⁽³⁹⁾.

The role of this multisectoral secretariat is to guide and monitor the national multisectoral nutrition policy and to liaise and coordinate between the ministerial departments, stakeholders and partners involved in implementing this policy through the national nutrition council. In addition to the national nutrition council, there are other consultation frameworks which take account of nutrition issues from a multi-sectoral perspective.

In other areas, however, Burkina Faso lags considerably behind current international good practice.

This is particularly the case for indicators relating to (i) menu labelling; (ii) reducing taxes on healthy foods; (iii) increasing rates on unhealthy foods and (iv) implementing dietary guidelines, for which no evidence of implementation has been

found. The low level of implementation for these indicators could be explained by the fact that, at the time of the assessment using the evidence documents outlining the state of public policies and government actions in relation to each indicator in the Food-EPI tool, there were no evidence documents supporting the existence of any implemented policy or action corresponding to these indicators in Burkina Faso ⁽²²⁾.

4.3. Strengths, challenges and limitations of the study

The main strength of this study is that it establishes a baseline that will enable us to continually assess the progress being made in the country in terms of healthy food environments. However, this cannot be done without the Food-EPI tool, which is a rigorous, comprehensive and internationally harmonized methodological framework. It enables an in-depth analysis of the policy landscape favorable or unfavorable to current food environments in Burkina Faso to be carried out and presented clearly and in detail in the form of an evidence report. The inclusion of the expertise of a wide circle of experts from academia, public administration and civil society who were consulted throughout the process is also a strong point of this study to facilitate the comparison of the level of implementation of public policies in Burkina Faso with international good practice.

Nevertheless, the challenge of this study is the fact that the results of the evaluation of the level of implementation of public policies and government actions are the result of the reasoned judgement of the expert evaluators. Indeed, on the one hand, the diversity of expertise of these expert assessors contributed adequately to this robust policy assessment process and on the other hand, it is also an implicit limitation that experts being likely to have expertise in one or two policy areas may have introduced some level of individual bias into each individual scoring exercise. However, it is likely that the use of the average level of implementation per indicator helped to minimize this individual influence. The high degree of inter-rater agreement also attests to the homogeneity of the assessments.

5. Policy implications

The lack of political and government regulations on menu labelling, reduced taxes on healthy foods, increased rates on unhealthy foods and food guidelines implemented

in Burkina Faso could explain the low level of implementation of public policy and government actions compared to international best practice.

The results of the study have implications for public health policy, practice and advocacy in Burkina Faso. Indeed, it serves as a benchmark for the government to promote healthy food environments.

In view of the impact of menu labelling on food choices, the Burkinabe government could elaborate regulations on menu labelling in fast-food outlets. Also, the financial accessibility of healthy foods and the imposition of taxes on unhealthy foods to make them unattractive would require new legislation. The introduction of a tax reduction system for imported healthy foods that are not available locally, and the imposition of an additional 20% tax on all products deemed unhealthy, could be considered ⁽⁴¹⁾. The government of Burkina Faso should also follow the lead of a number of African countries and draw up its own national dietary recommendations and a guide based on food consumption surveys.

In order to pursue research to promote the creation of a healthy food environment in Burkina Faso, it would be appropriate, following this study, to carry out research on corrective actions to address the shortcomings of the country's food environment policies. More specific research on the impact of food environments on the incidence of obesity and chronic diseases in Burkina Faso will help to identify possible solutions to ensure improved implementation of policies.

This research could also be facilitated using the results of the study on priority actions recommended to the government using the Food-EPI tool in Burkina Faso ⁽⁴¹⁾.

However, a synergy of action would be needed between the government, the food sector and civil society in order to implement new legislation to promote healthier food and prevent malnutrition in all its forms in the country. In view of the food transition, it is important to look at all the chains in the food system in order to bring about a transformation towards sustainable diets. However, this requires coherence between policy areas and levels of governance. An adaptive approach is also needed to facilitate a complete transition of food systems, incorporating food democracy and new democratic mechanisms in decision-making. Consequently, an integrated

strategy must be adopted and voluntary policies must be replaced by effective restrictions in order to improve the food environment.

6. Conclusion

This study has enabled Burkina Faso, for the first time, to assess the level of implementation of its public policies and government actions in relation to international good practice for creating healthy food environments. The general results showed that only a few infrastructure support indicators, in addition to a single indicator in the policy component, achieved a high level of implementation, while the overall level of implementation was medium, low or very low.

Existing policies and structures were judged to be particularly weak for indicators relating to menu labelling, lower taxes on healthy foods, increasing rates on unhealthy foods and the implementation of dietary guidelines. However, Burkina Faso does not achieve a "high" level of implementation in relation to international good practice for each of 56 indicators. This shows that there is a clear need for further improvements in policy and infrastructure support to promote healthy food environments in the country. This contribution yielded guidelines that will enable advocacy actions to be formulated for healthy food environment in Burkina Faso.

References

1. United Nations Development Programme (UNDP) (2024) Plateforme de connaissances sur le développement durable des Nations unies. *Objectifs en matière de Développement Durable (ODD)*.
<https://www.undp.org/fr/sustainable-development-goals/zero-hunger> (accessed August 2024).
2. FAO, FIDA, OMS, et al. (2024) Résumé de L'État de la sécurité alimentaire et de la nutrition dans le monde 2024. FAO ; FIDA ; OMS ; PAM ; UNICEF ;
3. World Health Organization (WHO) (2017) The double burden of malnutrition. Geneva: .
4. Popkin BM, Keyou G, Zhai F, et al. (1993) The nutrition transition in China: a cross-sectional analysis. *Eur J Clin Nutr* **47**, 333–346.
5. Popkin BM (2014) Synthesis and Implications: China's Nutrition Transition in the Context of Changes Across other Low and Middle Income Countries. *Obes Rev* **15**, 10.1111/obr.12120.
6. Monteiro CA, Levy RB, Claro RM, et al. (2011) Increasing consumption of ultra-processed foods and likely impact on human health: evidence from Brazil. *Public Health Nutr* **14**, 5–13.
7. Moubarac J-C, Martins APB, Claro RM, et al. (2013) Consumption of ultra-processed foods and likely impact on human health. Evidence from Canada. *Public Health Nutr* **16**, 2240–2248.
8. Swinburn B, Sacks G, Vandevijvere S, et al. (2013) INFORMAS (International Network for Food and Obesity/non-communicable diseases Research, Monitoring and Action Support): overview and key principles. *Obes Rev* **14 Suppl 1**, 1–12.
9. Anand SS, Hawkes C, de Souza RJ, et al. (2015) Food Consumption and its Impact on Cardiovascular Disease: Importance of Solutions Focused on the

- Globalized Food System. *Journal of the American College of Cardiology* **66**, 1590–1614.
10. Mozaffarian D (2016) Dietary and Policy Priorities for Cardiovascular Disease, Diabetes, and Obesity: A Comprehensive Review. *Circulation* **133**, 187–225.
 11. Swinburn B, Kraak V, Rutter H, et al. (2015) Strengthening of accountability systems to create healthy food environments and reduce global obesity. *Lancet* **385**, 2534–2545.
 12. Swinburn B, Vandevijvere S, Kraak V, et al. (2013) Monitoring and benchmarking government policies and actions to improve the healthiness of food environments: a proposed Government Healthy Food Environment Policy Index. *Obes Rev* **14 Suppl 1**, 24–37.
 13. Mozaffarian D, Angell SY, Lang T, et al. (2018) Role of government policy in nutrition-barriers to and opportunities for healthier eating. *BMJ* **361**, k2426.
 14. Vandevijvere S, Barquera S, Caceres G, et al. (2019) An 11-country study to benchmark the implementation of recommended nutrition policies by national governments using the Healthy Food Environment Policy Index, 2015-2018. *Obes Rev* **20 Suppl 2**, 57–66.
 15. Breda J, Castro LSN, Whiting S, et al. (2020) Towards better nutrition in Europe: Evaluating progress and defining future directions. *Food Policy* **96**, 101887.
 16. Vandevijvere S, Dominick C, Devi A, et al. (2015) The healthy food environment policy index: findings of an expert panel in New Zealand. *Bull. World Health Organ.* **93**, 294–302.
 17. United Nations Development Programme (UNDP) (2021) Profil de pays SUN (Burkina Faso)_Scaling Up Nutrition Movement (SUN) | Department of Economic and Social Affairs | Sustainable Development. .

18. Hawkes C, Jewell J & Allen K (2013) A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: the NOURISHING framework. *Obes Rev* **14 Suppl 2**, 159–168.
19. Vandevijvere S, Swinburn B, & International Network for Food and Obesity/non-communicable diseases (NCDs) Research, Monitoring and Action Support (INFORMAS) (2014) Towards global benchmarking of food environments and policies to reduce obesity and diet-related non-communicable diseases: design and methods for nation-wide surveys. *BMJ Open* **4**, e005339.
20. (2023) INFORMAS. *Benchmarking food environment*. <https://www.informas.org/countries/> (accessed June 2023).
21. Vandevijvere S & Swinburn B (2015) Pilot test of the Healthy Food Environment Policy Index (Food-EPI) to increase government actions for creating healthy food environments. *BMJ Open* **5**, e006194. British Medical Journal Publishing Group.
22. Tapsoba VA, Compaore EWR, Zeba AN, et al. (2024) Food Environment in Burkina Faso: Review of Public Policies and Government Actions Using the Food-EPI Tool. *Food Nutr Bull*, 03795721241248214. SAGE Publications Inc.
23. Julien Soliba Manga (2020) Analyse du niveau de mise en œuvre des politiques publiques et des actions gouvernementales visant la création d’environnements alimentaires sains au Sénégal. .
24. Swinburn B, Egger G & Raza F (1999) Dissecting obesogenic environments: the development and application of a framework for identifying and prioritizing environmental interventions for obesity. *Prev Med* **29**, 563–570.
25. Asiki G, Wanjohi MN, Barnes A, et al. (2020) Benchmarking food environment policies for the prevention of diet-related non-communicable diseases in Kenya: National expert panel’s assessment and priority recommendations. *PLoS ONE* **15**, e0236699 [Siegel R, editor].

26. Laar A, Barnes A, Aryeetey R, et al. (2020) Implementation of healthy food environment policies to prevent nutrition-related non-communicable diseases in Ghana: National experts' assessment of government action. *Food Policy* **93**, 101907.
27. Manga JS, Diouf A, Vandevijvere S, et al. (2022) Evaluation and prioritisation of actions on food environments to address the double burden of malnutrition in Senegal: perspectives from a national expert panel. *Public Health Nutrition* **25**, 2043–2055. Cambridge University Press.
28. Pineda E, Poelman MP, Aaspõllu A, et al. (2022) Policy implementation and priorities to create healthy food environments using the Healthy Food Environment Policy Index (Food-EPI): A pooled level analysis across eleven European countries. *The Lancet Regional Health – Europe* **23**. Elsevier.
29. World Health Organization (WHO) Alimentation saine. <https://www.who.int/fr/news-room/fact-sheets/detail/healthy-diet> (accessed October 2023).
30. Ministère de la Santé et de l'Hygiène Publique du Burkina Faso (MSHP_BF) (2021) *Enquête Nutritionnelle Nationale (ENN) (SMART 2021)*. .
31. Ministère de la Santé et de l'Hygiène Publique du Burkina Faso (MSHP_BF) (2023) *Enquête Nutritionnelle Nationale (ENN) (SMART 2023)*. .
32. Rom MC, Hidaka M & Walker RB (2022) 8.2 What Are the Pros and Cons of Interest Groups? - Introduction to Political Science | OpenStax. OpenStax; <https://openstax.org/books/introduction-political-science/pages/8-2-what-are-the-pros-and-cons-of-interest-groups> (accessed August 2024).
33. Barbazza E, Langins M, Kluge H, et al. (2015) Health workforce governance: Processes, tools and actors towards a competent workforce for integrated health services delivery. *Health Policy* **119**, 1645–1654.

34. Mozaffarian D (2017) Conflict of Interest and the Role of the Food Industry in Nutrition Research. *JAMA* **317**, 1755–1756.
35. Ouedraogo O, Doudou MH, Drabo KM, et al. (2021) Facilitating factors and challenges of the implementation of multisectoral nutrition programmes at the community level to improve optimal infant and young child feeding practices: a qualitative study in Burkina Faso. *Public Health Nutr* **24**, 3756–3767.
36. Ministère de la Santé_Burkina Faso (2020) Politique Nationale Multisectorielle de Nutrition 2020-2029. .
37. Ministère de la Santé et de l'Hygiène Publique du Burkina Faso (MSHP_BF) (2020) Plan Stratégique Multisectoriel de Nutrition (PSMN) 2020-2024. .
38. Institut National de la Statistique et de la Démographie (INSD) (2019) Plateforme nationale d'information pour la nutrition (PNIN). <https://nutrition.bf/> (accessed July 2024).
39. Présidence du Burkina Faso (2021) *Decret N° 2021-0929/PRES/PM/MINEFID/MS/MESRSI/MAAHM/MRAH portant création, attributions, organisation et fonctionnement du Conseil national pour la nutrition (CNaN)*. .
40. Ouedraogo O, Doudou MH, Drabo KM, et al. (2020) Policy overview of the multisectoral nutrition planning process: The progress, challenges, and lessons learned from Burkina Faso. *The International Journal of Health Planning and Management* **35**, 120–139. John Wiley & Sons, Ltd.
41. Tapsoba VA, Compaore EWR, Zeba AN, et al. (2024) Food environment in Burkina Faso: priority actions recommended to the government using Food-EPI tool. *Front. Nutr.* **11**. Frontiers.

Figures legend

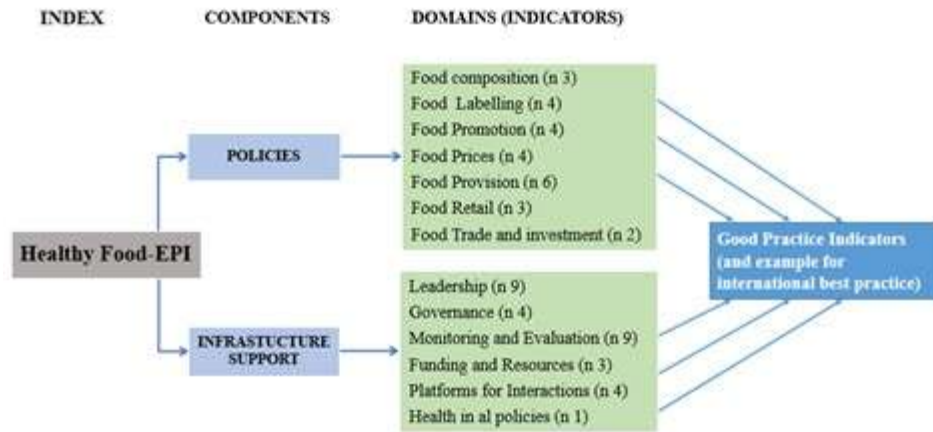


Figure 1: Components and domains of the healthy Food Environment Policy Index (Food-EPI) adapted to the Burkina Faso context⁽¹²⁾.

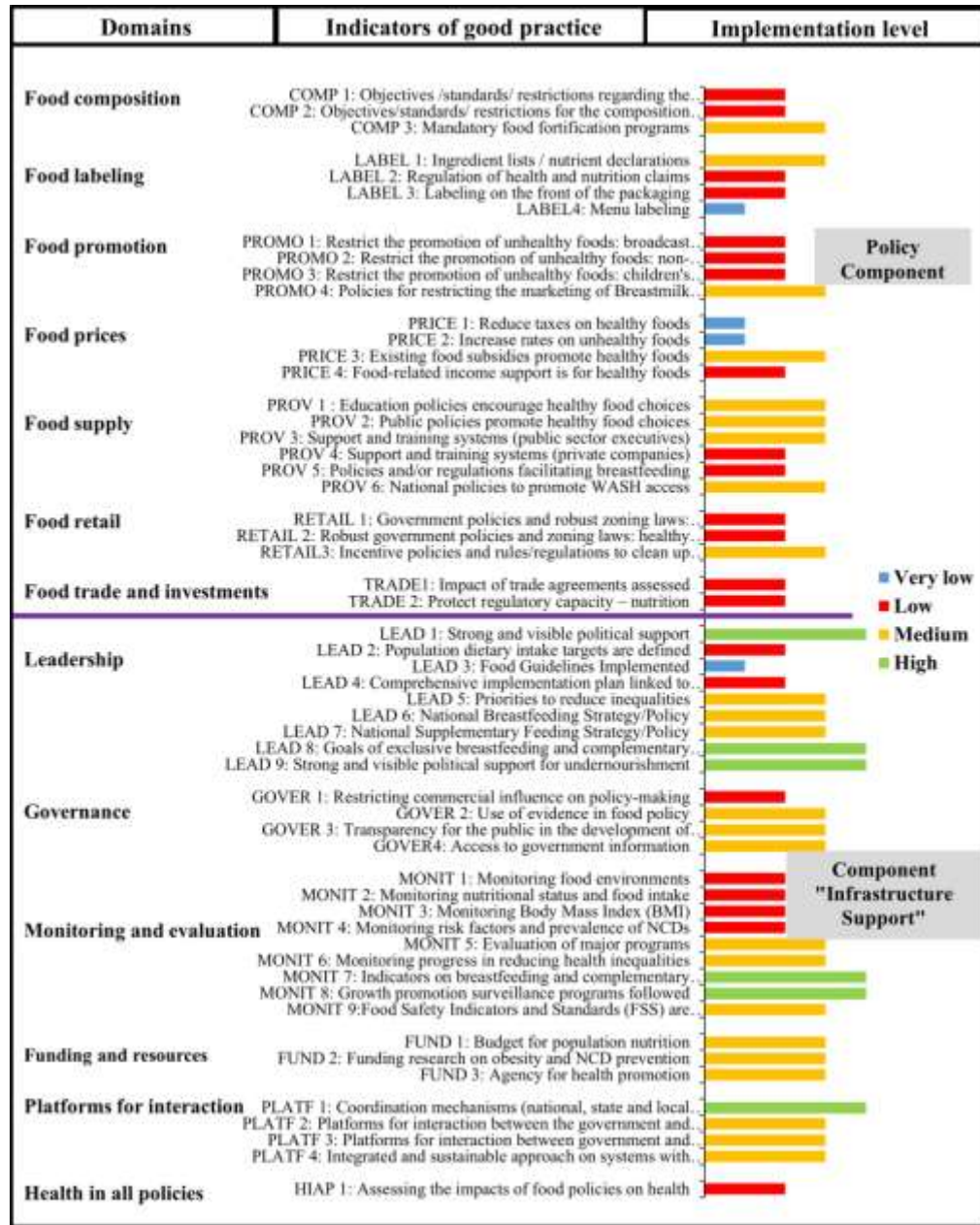


Figure 2: Level of policy implementation compared to international good practice in Burkina Faso, year 2022.

Table 1: Indicators assessed differently by the two groups of expert evaluators, Food-EPI Burkina Faso, 2022

N°	Indicators	Level of implementation of indicator	
		GOVERNMENT	INDEPENDENT
1	COMP 3: Mandatory food fortification programs	High	Medium
2	LABEL 3: Labelling on the front of packaging	Low	Very low
3	PROMO 2: Restricting the promotion of unhealthy foods: non-broadcast media	Low	Very low
4	PRICE 1: Reduce taxes on healthy foods	Low	Very low
5	PRICE 3: Existing food subsidies favor healthy foods	Medium	Low
6	PRICE 4: Food-related income support for healthy food	Medium	Low
7	RETAIL 3: Incentive policies and rules/regulations to clean up the food environment in the informal sector	Medium	Low
8	TRADE 1: Impact of trade agreements evaluated	Medium	Low
9	LEAD 4: Full implementation plan linked to state/national needs	Medium	Low
10	LEAD 6: National breastfeeding policy	Medium	High
11	GOVER 1: Restricting	Low	Very low

	commercial influence on policy development		
12	GOVER 2: Use of evidence in food policies	Medium	Low
13	GOVER 3: Transparency for the public in the development of food policies	Medium	Low
14	GOVER 4: Access to government information	High	Medium
15	MONIT 4: Monitoring risk factors and the prevalence of NCDs	Medium	Low
16	MONIT 5: Evaluation of major programs	Medium	Low
17	MONIT 6: Monitoring progress in reducing health inequalities	High	Low
18	MONIT 7: Indicators on breastfeeding and complementary feeding monitored	High	Medium
19	FUND 1: Budget for population nutrition	Medium	Low
20	FUND 2: Funding research into obesity and the prevention of NCDs	Medium	Low
21	PLATF 1: Coordination mechanisms (national, state and local government)	High	Medium
22	PLATF4: Integrated and sustainable approach to systems with local organizations	Medium	Low