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## Article on benchmarking criteria and policy index D2.9

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## Executive Summary

As part of the CO-CREATE project, World Cancer Research Fund (WCRF) International is required to write a scientific journal article outlining the development of the NOURISHING and MOVING benchmarking tools and policy indexes. These tools aim to assess and compare the status of nutrition and physical activity policies across 27 European countries. This report concerns the process of producing the journal article which outlines the development of the benchmarking tools and policy indexes. The findings of the application of these tools will be delivered in M60 of the project in Deliverable 2.12.

This manuscript introduces the NOURISHING and MOVING benchmarking tools and associated policy indexes for nutrition and physical activity policies, designed as part of the European Union (EU) funded CO-CREATE project. It outlines the process undertaken for the development of these tools, and introduces their structure and key characteristics. The manuscript also discusses the limitations of the tools, as well as plans for their application across 27 European countries.

The journal article manuscript has initially (M33) been submitted in the form of a draft. It was subsequently submitted to Obesity Reviews and published in January 2023 (M56). For publication, it underwent peer-review which led to changes in length and specific sections, although the main structure and focus remained unchanged.

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## List of acronyms / abbreviations

CO-CREATE	Confronting Obesity: Co-creating Policy with Youth project
D2.9	Deliverable 2.9
EU	European Union
MOVING	the MOVING Framework/database on physical activity policy actions
NOURISHING	the NOURISHING Framework/database on diet and nutrition policy actions
UCT	University of Cape Town
WCRF	World Cancer Research Fund
WP	Work-package of the CO-CREATE project

## Introduction

As part of the EU-funded project ‘Confronting Obesity: Co-creating policy with youth’, known as the ‘CO-CREATE’ project, World Cancer Research Fund (WCRF) International is responsible for deliverables in Work Package (WP) 2. As part of Deliverable 2.9 (D2.9), WCRF International has developed scientific manuscript which discusses two benchmarking tools and policy indexes developed as part of the CO-CREATE project in order to assess the status of countries’ nutrition and physical activity policies. This scientific paper aims to present the process of development of the NOURISHING and MOVING benchmarking tools and policy indexes for nutrition and physical activity policies.

This report discusses the manuscript’s background, the process involved in developing the manuscript, its main structure and findings, as well as the challenges with regards to developing this paper. Finally, it discusses the future dissemination plans for this draft paper.

## Deliverable description

Deliverable 2.9 consists of ‘an article on benchmarking criteria and policy index’. As outlined in the Grant Agreement, as part of D2.9, ‘an article in a peer-reviewed journal will be provided, summarising the benchmarking criteria and policy index provided throughout the project’.

Deliverable 2.9 forms part of Task 2.5 which requires WP2 to involves the ‘establish and validate criteria for benchmarking policies retrieved through the policy scan and create a policy index to assess “policy status” of European countries in the areas of promoting healthy diets and physical activity’.

## Objective of the deliverable

The objective of this deliverable is to outline the process of the development of the NOURISHING and MOVING benchmarking tools and policy indexes.

## Background

As part of the CO-CREATE project, WCRF International is responsible for deliverables in WP 2. This includes development of a physical activity policy framework (the MOVING framework) (D2.1), a journal manuscript about the MOVING physical activity policy framework (D2.2), developing the methodology to conduct a Comprehensive European policy scan for diet and physical activity (D2.3), the development of an article on the challenges associated with conducting a global and targeted in-depth European policy scan for diet and physical activity (D2.4), and developing a physical activity policy database and a web-platform (D2.5 and D2.6). WCRF International has also already developed a policy benchmark (D2.8) to assess individual policies to ascertain the overall ‘policy status’ of European countries regarding the promotion of healthy diets and physical activity, alongside a first policy brief on the effects of implemented policies and policy outputs (D2.10).

Deliverable 2.9 requires WCRF International to deliver a scientific journal manuscript which presents the development of outputs from D2.8.

Some deliverables and tasks outlined above are ongoing and are being conducted concurrently, such as the comprehensive European policy scan for diet and physical activity (Task 2.5, D2.3). As the scan is progressing, the benchmarking tools (D2.8) are undergoing a process of testing and refinement.

Outlined below is further information on the deliverables used to develop this journal article.

### **The MOVING framework (D2.1)**

In October 2020, following conducting the policy scans for a number of EU countries, analysing how policies were stored in the database, we identified that the MOVING framework would benefit from some small changes with regards to how it categorised policy actions. Thus, these changes regard the structure of the MOVING framework. They do not focus on the content of the framework and database or the scan methodology.

In December 2020, these changes were incorporated in the MOVING framework, its graphic and the policy database. Further, these changes are currently being carried forward in the physical activity benchmarking tool.

### **Progress on the Comprehensive European Scan (Task 2.3)**

Task 2.3 involves performing a comprehensive country-level policy scan for physical activity and diet across European countries which are then added to the NOURISHING and new MOVING databases. The comprehensive policy scans of the five CO-CREATE project countries have to date resulted in 350 policies being identified across the five CO-CREATE countries for the MOVING database. Of these 350, 219 have been verified (as of the 21<sup>st</sup> of January 2021). For NOURISHING, a total of 233 policies were identified, out of which 77 policy actions were verified and included in the database and 156 are awaiting verification. Delays due to personnel recruitment and staff sickness due to COVID-19 resulted in delays in the comprehensive NOURISHING scan. Delays in the verification process have also been recorded, likely due to the burden of the COVID-19 response on governments.



### **Policy benchmark and country indexes (Task 2.5)**

The MOVING and NOURISHING policy benchmarks were developed to benchmark policies, giving an overall numerical score to show how strong the policy is. These benchmarks cover national-level physical activity (through MOVING) and nutrition (through NOURISHING) policies. The policy index was submitted to the European Commission in M16. The policy indexes are structured around the NOURISHING and MOVING policy areas, with each policy area having its own set of criteria.

Benchmarking a policy involves scoring the policy against a set of criteria (listed as “tiers”, and the number of these range between three and five), thereby allowing a policy to be given a numerical value based on how successfully it fulfilled those criteria.

Developing a country-score involves undertaking a country-scan to identify and verify the policy, then using the benchmarking tool to score it in line with the relevant benchmarking criteria. Whilst the final coding schema has not yet been agreed, the tool anticipates that the policies scored within that country then have their scores totalised, and ranked against the scores of other countries in similar policy areas. This will allow for a comparison of the strength of policies across countries.

### **First Policy Brief on the effects of implemented policies and policy outputs (D2.10)**

The First Policy brief (D2.10) gave WCRF the opportunity to test the benchmarking tool on a larger sample of policies, and look at how scores and policies interact with one another. However, as the brief only reviewed a sample of policies, it was hard to compile into individual country scores, as these would not reflect the nuances of the country’s policy landscape. The process of development of D2.10 highlighted a need of further refinement to the NOURISHING and MOVING benchmarking tools, which informed the development of the draft manuscript as well and is therefore presented further below.

## **Description of activities**

The following process was undertaken to develop this manuscript.

### **Benchmarking workshop**

The development of the first policy brief on implemented nutrition and physical activity policies in the CO-CREATE countries (D2.10), delivered in M24, highlighted the need to further refine and pilot the benchmarking tools, as well as the policy index. As such, a two-day online workshop was organised in April 2020 (M24), in collaboration with WP3. The objectives of the workshop were to:

1. Review the benchmarks and assess how they are performing
2. Finalise coding schema and scoring of benchmarks
3. Finalise ranges within policy indexes
4. Update technical notes and methods where appropriate
5. Agree next steps in promoting the benchmark (as a tool), the results and disseminating information

The workshop highlighted the need to refine the benchmarking tools so that they can be applied to full country datasets, and not just single policies, and thus capture the interplay between policies to create a policy environment. As a result of the workshop, each of the NOURISHING and MOVING policy benchmarks had to be re-formulated so that they would allow benchmarking multiple policies at once. The benchmarks were also transferred to an online survey format with a view of making the tools more user-friendly.

### **Benchmarking pilot**

As a further step, the reformulated benchmarks for NOURISHING were piloted on a full country dataset in December 2020. The MOVING benchmarks have also been transferred to the online survey format, and testing on a full country dataset is pending.

The NOURISHING benchmarking pilot was undertaken in collaboration with partners from University of Cape Town (UCT), who are undertaking nutrition and physical activity scans in South Africa. However, the country dataset chosen consisted of the results of the comprehensive scan for nutrition in Norway. It was important to choose a context that was not familiar to the reviewers in order to test whether the policy descriptions in the extraction sheets compiled as part of the comprehensive scan would be sufficient to inform scoring. Prior testing had indicated that contextual knowledge could influence the benchmarking score given by individual reviewers.

### **Identifying co-authors**

WP2 (WCRF International) is responsible for the main drafting of the article. Key personnel include:

- Diva Fanian (WP2 / WCRF International)
- Margarita Kokkorou (WP2 / WCRF International)
- Kate Oldridge-Turner (WP2 / WCRF International)
- Fiona Sing (Former WCRF International Policy and Public Affairs Manager) (WP2 / WCRF International)
- Dr. Ioana Vlad (WP2 / WCRF International)

The following co-authors were identified at the development of the initial publication proposal, based on their involvement in the development of the benchmarking tools (D2.8).

A publication proposal was circulated within the CO-CREATE Executive Board which invited personnel from all WP packages to contribute alongside the Principal Investigators. The following co-authors were identified.

#### **Principal Investigators**

- Professor Knut–Inge Klepp
- Professor Harry Rutter

#### **WP contributors**

- Dr. Arnfinn Helleve (WP3)
- Dr. Anne–Siri Fismen (WP3)



A number of WCRF International staff were also identified as co-authors given their involvement in the project to date.

WCRF International contributors

- Dr. Kate Allen, Executive Director, Science and Policy, WCRF International
- Dr. Giota Mitrou, Director of Research, WCRF International
- Prof. Martin Wiseman, Medical and Scientific Advisor, WCRF International

As a result of the collaboration with UCT for the piloting of the benchmarking tools, two other co-authors were identified:

- Sonia Malczyk (UCT)
- Dr. Janetta Harbron (UCT)

### **Developing a draft manuscript**

The article manuscript presents the rationale for the development of the NOURISHING and MOVING benchmarking tools and policy indexes as instruments that can assess the status of government action with regards to nutrition and physical activity. It explains how the tools are innovative as they undertake this assessment by reference to standards that are aspirational, unlike existing tools which use current best practice as a benchmark.

The article outlines the methods used for the development of the benchmarking tools, specifically: a review and analysis of existing instruments; development of a benchmarking prototype that assesses key policy attributes while being user-friendly and easy to apply; multiple rounds of consultation with an expert group convened with the purpose of assessing the evidence base underlying indicators and associated policy attributes (or ‘tiers’) for each policy area of NOURISHING and MOVING.

The results section of the article outlines the structure of the tools, which includes four elements: the policy areas, the benchmarks, relevant indicators and a proposed coding scheme. It describes how each policy area of the NOURISHING and MOVING frameworks is allocated several benchmarks and that each benchmark is accompanied by an indicator in the form of a statement of government support. The level of government support is then valued based on a minimum of four policy attributes

In the discussion section, the application of the tool within Co-Create is explained, as well as its applicability beyond the limits of this project. The plans for the policy index were to be applied to a sample of 27 countries as part of the Co-Create project, resulting in a European policy country index for nutrition and physical activity policy. While the tools are to be applied for the European region in the first instance, they are designed to be transferrable to other regions. As such, it is expected that the tool be tested in settings outside Europe, in first instance on data on implemented national-level policies for nutrition and physical activity in South Africa, as part of the collaboration with UCT. The existing literature of benchmarking and policy indexes for policy development is also discussed,

highlighting that the NOURISHING and MOVING benchmarking tools and policy indexes will enable policy learning, while also allowing countries to assess the status of their nutrition and physical activity policies by reference to aspirational standards, thus encouraging policy innovation.

### **Refining and finalising the draft**

The draft went through two rounds of review by the co-authors. During each round of review, comments were received and collated and the draft was updated.

## **Results**

The draft journal article which was initially submitted was entitled ‘Benchmarking diet and physical activity policy to support the prevention of obesity and non-communicable diseases: the development of benchmarking tools and policy indexes within the CO-CREATE project’.

Upon feedback received from the peer review process after submission to Obesity Reviews, the title of the article was changed to “The development of the NOURISHING and MOVING benchmarking tools to monitor and evaluate national governments’ nutrition and physical activity policies to address obesity in the European region”. The published paper is attached to this report [D2.9. Manuscript on the policy benchmarking tool and indexes].

## **Discussion**

The drafting process, as well as the use of the benchmarking tools for the finalisation of associated deliverable, provided an opportunity to undertake a refinement of the benchmarking tools, as part of a benchmarking workshop and a subsequent piloting process for the tools.

Furthermore, it highlighted further developmental needs in order to apply the benchmarking tools and the policy indexes. As a next step, the results of the benchmarking pilot were used to refine the scoring scheme, which enabled WP2 to produce the policy index, and D2.12 submitted in M60.

Furthermore, the development of the policy index led to the development of a separate journal article, which drew in part from the results of the piloting process and was also published in Obesity reviews in February 2023, under the title ‘Pilot test of the NOURISHING policy index—Assessing governmental nutrition policies in five European countries.’

This work highlighted a need to make some minor edits to the categorisation of the MOVING framework (D2.1). These changes are currently being reflected in the MOVING physical activity benchmark. Furthermore, the MOVING benchmarks are also being transferred to an online survey format, with the purpose of increasing the user-friendliness of the tool and its capacity to capture the policy environment, and not just single policies. The MOVING policy benchmarks will also undergo a pilot test, as has been done for the NOURISHING benchmarks.

The journal *Obesity Reviews* was chosen as the target journal, and the submission was included as part of the CO-CREATE Supplement. The article was published open access.

The peer-review process focused on two main issues. First, the manuscript was carefully edited to make the distinction between the policy benchmarking tools, which are the focus of the paper, and other associated tools, such as the NOURISHING and MOVING frameworks and databases clearer. In short, the benchmarking tools were developed by building on the two pre-existing frameworks and databases, but they are distinct from the latter. A figure was added in the text of the paper (Figure 4) clarifying the nature and distinction between these tools. Second, specific sections of the introduction and the discussion were edited to clearly state the research gap this paper fills, specifically to develop a benchmarking tool that assesses the quality of design of implemented national government policies by reference to aspirational benchmarks, rather than currently implemented best practice.

The development and application of the NOURISHING and MOVING benchmarking tools is also being disseminated in other scientific fora. For example, the tools were presented at the STOP / CO-CREATE / PEN Joint Symposium on 30 June 2020. Subsequently, the development of tools was also discussed with a key expert in the development of a similar tool, the Healthy Food Environment Policy Index (Food-EPI), and plans were made to assess similarities and differences of findings, when they become available. Future plans also include presenting not only the development of the tools, but also findings of their application on data collected as part of the comprehensive scan (D2.5). An important dissemination and collaboration opportunity is the Joint Action on Implementation of Validated Best Practices in Nutrition (Best-ReMaP Joint Action). The findings from the benchmarking process were also disseminated at a variety of conferences; preliminary results were presented at the European Congress on Obesity 2022, the International Society of Behavioural Nutrition and Physical Activity 2022 and the Health-Enhancing Physical Activity Conference 2022. We further disseminated the results of the benchmarking tools and policy indexes at these conferences in 2023.

### Challenges

The inclusion of the results of piloting the benchmarking tools in this manuscript was limited by the timing of concurrent work on the comprehensive scan of nutrition and physical activity policies in 27 European countries. As verified policies became available, it became clear that the benchmarking tools required further refinement, both with a view of applying the benchmarks on multiple policies at once, and further improving the user-friendliness of the tool.

### Conclusion

The draft manuscript (D2.9) outlines the development of the MOVING and NOURISHING policy indexes, which are policy tools that bring together a set of indicators, relevant benchmarks and evidence-based policy attributes that allow an analysis of countries' progress in nutrition and physical activity policies. These tools will allow easy comparisons between countries and will produce an overall assessment of the status of nutrition and physical activity policies across Europe. The



process undertaken to produce this manuscript was dependent on progress with other deliverables in WP2 and close collaboration across the CO-CREATE project.

This article was published in Obesity Reviews in January 2023.

## Appendix

The attached document

*The development of the NOURISHING and MOVING benchmarking tools to monitor and evaluate national governments' nutrition and physical activity policies to address obesity in the European region*



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SUPPLEMENT ARTICLE

OBESITY 

### The development of the NOURISHING and MOVING benchmarking tools to monitor and evaluate national governments' nutrition and physical activity policies to address obesity in the European region

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#### Summary

Despite assurances of government action, the burden of non-communicable diseases (NCDs) and overweight and obesity is continuing to grow at an alarming rate both globally and in Europe. The NOURISHING and MOVING policy frameworks outline a comprehensive set of policy actions across 6 domains and 16 policy areas in which national governments should take action to promote healthy diets and physical activity. Monitoring and benchmarking these policies is important for assessing progress on obesity and NCD prevention. This paper describes the participatory process for developing benchmarking tools structured around the policy areas of the NOURISHING and MOVING policy frameworks. They consist of a set of indicators and policy attributes that assess government support in promoting healthy nutrition and physical activity. They are adolescent relevant as they capture policy actions that target or impact adolescents. The benchmarking tools are designed to monitor progress on national government action on nutrition and physical activity based on aspirational standards. They will be applied in 27 European countries initially and are aimed at policymakers, researchers, and civil society, to track progress, develop the research infrastructure on effectiveness of NCD prevention policies at population level, and support advocacy efforts.

#### KEYWORDS

benchmarking, nutrition, physical activity, policy


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# The development of the NOURISHING and MOVING benchmarking tools to monitor and evaluate national governments' nutrition and physical activity policies to address obesity in the European region

Ioana Vlad<sup>1</sup>  | Kate Oldridge-Turner<sup>1</sup>  | Knut-Inge Klepp<sup>2</sup>  | Harry Rutter<sup>3</sup> |  
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Despite assurances of government action, the burden of non-communicable diseases (NCDs) and overweight and obesity is continuing to grow at an alarming rate both globally and in Europe. The NOURISHING and MOVING policy frameworks outline a comprehensive set of policy actions across 6 domains and 16 policy areas in which national governments should take action to promote healthy diets and physical activity. Monitoring and benchmarking these policies is important for assessing progress on obesity and NCD prevention. This paper describes the participatory process for developing benchmarking tools structured around the policy areas of the NOURISHING and MOVING policy frameworks. They consist of a set of indicators and policy attributes that assess government support in promoting healthy nutrition and physical activity. They are adolescent relevant as they capture policy actions that target or impact adolescents. The benchmarking tools are designed to monitor progress on national government action on nutrition and physical activity based on aspirational standards. They will be applied in 27 European countries initially and are aimed at policymakers, researchers, and civil society, to track progress, develop the research infrastructure on effectiveness of NCD prevention policies at population level, and support advocacy efforts.

## KEYWORDS

benchmarking, nutrition, physical activity, policy

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## 1 | INTRODUCTION

Despite assurances of government action, the burden of non-communicable diseases (NCDs) is continuing to grow.<sup>1</sup> The World Health Organization (WHO) estimates that, worldwide, 15 million people die prematurely every year due to NCDs. Out of these, 80% could be prevented by action to lower exposures that lead to NCDs.<sup>2</sup> It is estimated that approximately 40% of all cancers and nearly three quarters of conditions such as heart disease and diabetes could be prevented by addressing unhealthy diets, physical inactivity, alcohol and tobacco use.<sup>3,4</sup> According to the 2019 Global Burden of Disease estimates, action in improving diets could prevent one in every five premature deaths globally.<sup>5</sup>

Adolescents, defined by WHO as those aged between 10 and 19,<sup>6</sup> are increasingly affected by exposure to risk factors of NCDs. In Europe, overweight and obesity affects one in five adolescents, with signs of increase in some countries.<sup>7</sup> A majority of adolescents do not meet the WHO daily physical activity recommendations, and these levels have shown signs of decline in some European countries.<sup>8</sup> Further, despite some promising decreases in consumption of sugar-sweetened beverages, consumption remains high—almost one in six adolescents in Europe drink sugary soft drinks daily and one in four eat sweets every day.<sup>7</sup> This is alarming because adolescents' habits with regard to nutrition<sup>9</sup> and physical activity<sup>10</sup> seem to track into adulthood. It is therefore important that NCD prevention starts with tackling unhealthy diets and promoting physical activity, two key factors for health during adolescence and later in life.

Recognising this, the 5-year project *Confronting Obesity: Co-creating Policy with Youth* ('CO-CREATE'),<sup>11</sup> funded by the European Union's Horizon 2020 Research and Innovation Programme, aims both to strengthen the evidence base on a comprehensive set of nutrition and physical activity policies, and to link this evidence with processes that empower adolescents to participate in policy development. As part of its policy assessment and monitoring work, CO-CREATE funded the development of a physical activity policy framework, MOVING, to accompany an existing framework for nutrition policy, the NOURISHING framework.<sup>12,13</sup>

The NOURISHING framework is a well-established theoretical tool that was designed to operationalise a comprehensive set of policy actions to effectively promote healthier eating.<sup>12</sup> It consists of 10 key policy areas within three domains—food environment; food system; and behaviour change and communication—which make up a comprehensive approach to nutrition policy, as outlined in Figure 1. The MOVING policy framework follows a similar structure and principles.<sup>13</sup> The framework consists of six policy areas across three policy domains—active societies; active environments; and active people—that operationalise a comprehensive approach to policies that promote physical activity, as outlined in Figure 2. The two frameworks focus on policy actions, defined as specific actions put in place by national-level governments and associated agencies to achieve a public health objective.<sup>12</sup> As defined by the two frameworks, nutrition and physical activity policy actions include individual measures and actions taken by national governments to promote healthy diets and

promote physical activity, for example, laws and regulations, programmatic interventions, and public information campaigns. Policy actions are thus the actual options selected by policymakers and a part of public policy, whereas public policy is broader and refers to the 'system of laws, regulatory measures, courses of action, and funding priorities concerning a given topic promulgated by a governmental entity or its representatives'.<sup>14</sup>

The two policy frameworks are aligned with international recommendations for NCD prevention, including the WHO Global NCD Action Plan 2013–2020,<sup>15</sup> the WHO 'best buys' for the prevention and control of NCDs,<sup>16</sup> the 10-year Action Plan for the Prevention and Control of NCDs in the WHO European Region,<sup>17</sup> and the WHO Global Action Plan on Physical Activity.<sup>18</sup> These documents outline nutrition and physical activity interventions that are cost effective in the prevention of NCDs.

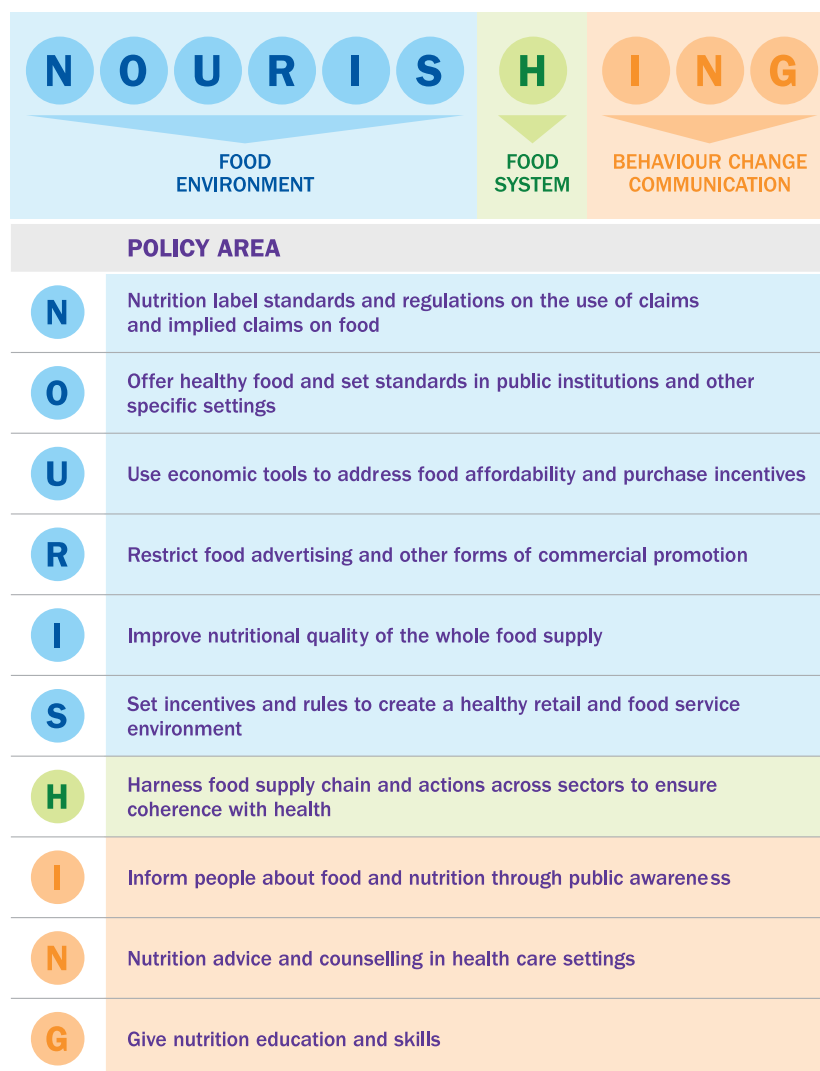
However, progress on the implementation of these global NCD prevention recommendations is slow and off track.<sup>1,16</sup> Therefore, monitoring policy development is necessary to hold national governments to account on their commitment to NCD prevention. Recognising this, two policy databases—known as the NOURISHING and MOVING databases—were developed to accompany the NOURISHING and MOVING policy frameworks. These databases document implemented national government policy actions that aim to improve diets and levels of physical activity at population level. The comprehensive scan methodology used to populate the two databases is outlined in detail elsewhere.<sup>19,20</sup> The data are being made publicly available online, as they emerge, on the NOURISHING and MOVING databases.<sup>21</sup>

To effectively track progress, compare countries and reduce duplication of efforts, a second step in policy monitoring and evaluation is necessary. Benchmarking is a key tool used to compare progress and that enables learning on policy design and implementation across countries.<sup>22,23</sup> Benchmarking tools are extensively used as part of efforts for NCD prevention and have been developed for several NCD risk factors.<sup>24</sup> A key review paper<sup>25</sup> on benchmarking tools associated with global action plans or strategies to tackle NCDs identified 14 tools that contain indicators relevant to NCD prevention, including nutrition and physical activity policy.

The existing approaches to benchmarking nutrition and physical activity policy vary with regard to what attributes are being assessed and how these are measured. For nutrition and physical activity policy, the simplest tools are instruments such as WHO EURO Physical Activity Fact Sheets (2018),<sup>26</sup> asking whether a policy is present or not. Other benchmarking tools, such as the GoPA! (Global Observatory for Physical Activity) country cards<sup>27</sup> or the Healthy Food Environment Policy Index (Food-EPI),<sup>28</sup> go a step further and assess indicators by measuring policy attributes with varied degrees of complexity, ranging from design<sup>29</sup> to implementation<sup>28</sup> attributes. A typology of benchmarking tools for nutrition and physical activity national government policies is outlined in Tables 1 and 2, based on the complexity of policy attributes identified. An overview of existing benchmarking tools related to NCD prevention is provided in Appendix S1.

Analysis of existing tools shows the need to develop a benchmarking tool that would assess the quality of design of implemented

FIGURE 1 The NOURISHING framework



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policies by reference to aspirational benchmarks, rather than currently implemented best practice. Existing tools in the third category in Table 1, including the Food-EPI, opt to measure indicators by reference to current best practice. This approach is supported by the premise that holding national governments to a theoretical standard may be perceived as unrealistic by policymakers.<sup>28</sup> However, conversely, measuring government action against existing examples of best practice holds countries to a low standard and potentially lowers demands on governments to innovate. Therefore, benchmarking the quality of policy design to evidence-based, aspirational indicators can be a valuable tool for holding national governments to a higher standard than current practice, and thus influencing further policy development. Such a tool should incorporate emerging evidence on what constitutes good policy design in nutrition and physical activity, even if no country has adopted such practices.

This paper aims to outline the development of benchmarking tools to monitor and evaluate national governments' nutrition and physical activity policies by reference to aspirational standards. Given the importance of nutrition and physical activity among adolescents in

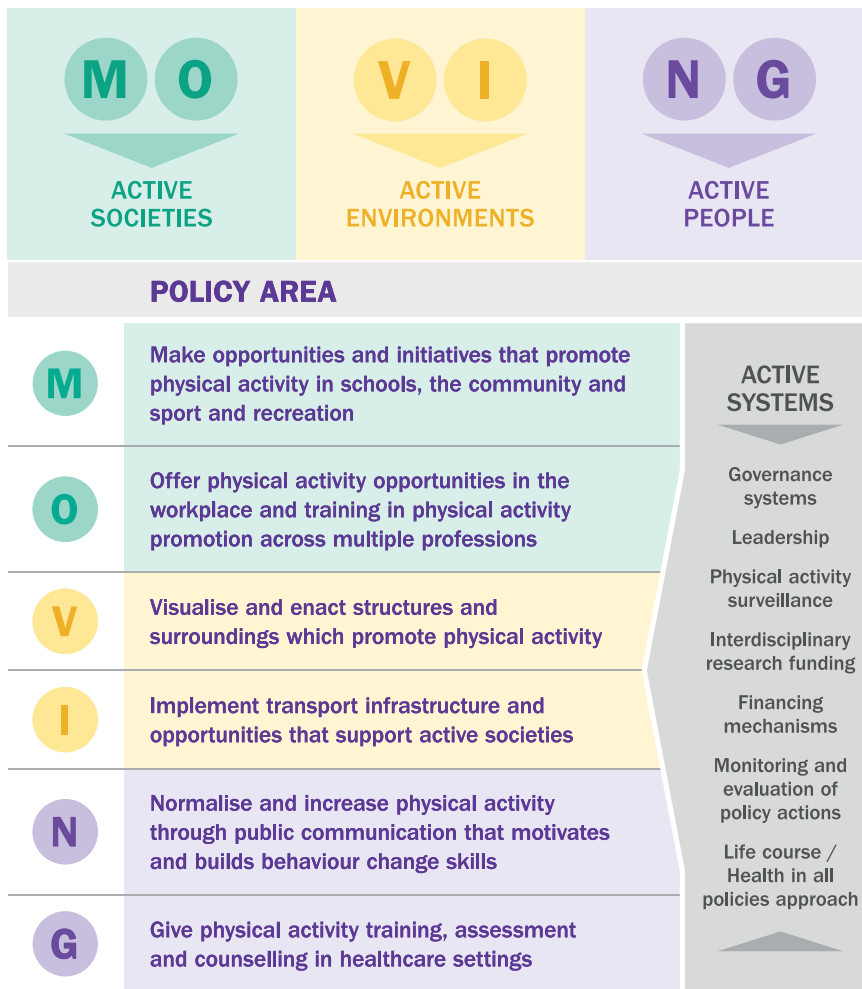
determining future trends in NCDs, these tools also include a focus on policy actions and attributes that specifically target adolescents.

## 2 | DEVELOPMENT OF THE BENCHMARKING TOOLS

The development of the benchmarking tools was theoretically underpinned by the two existing policy frameworks for nutrition and physical activity, NOURISHING and MOVING, and consisted of two steps:

- Step 1: development and testing of benchmarking prototypes (structure) for nutrition policy actions;
- Step 2: development of nutrition and physical activity benchmarks, including five rounds of consultation with an expert group convened for this purpose.

Step 1: development and testing of benchmarking prototypes.



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FIGURE 2 The MOVING framework

The first step consisted of testing four benchmarking prototypes, outlined in Table 3. Each of these prototypes were applied to nutrition policy actions in seven European countries—Denmark, Finland, France, Italy, Latvia, Spain and the United Kingdom (UK)—to ascertain the model of benchmarks that best captured variation between countries' national government policy actions. The countries were selected based on differences in the prevalence of overweight and obesity amongst adolescents,<sup>8</sup> geographical and socio-political environment and availability of policy actions in the NOURISHING database.<sup>21</sup> Physical activity policy actions were not available in the MOVING database at the time, therefore physical activity prototypes were not developed.

A set of criteria was developed to judge the robustness of the different benchmarking prototypes when applied to the sample countries. The assessment criteria were: the degree of complexity and range of information generated, that is, whether the tool would capture variability between countries; the robustness of the tool, that is, whether the tool could generate answers on the quality of the policy actions implemented and whether results could be generated across a range of countries and policy actions; and the resources required by researchers (including support from national government experts) to apply the tools in a country setting.

Each prototype was assessed against these criteria to decide the most appropriate structure of the benchmarks, which utilised aspirational attributes and balanced feasibility with the ability to capture country variability. A blended approach combining prototypes 3 and 4 appeared feasible and was chosen for the development of the benchmarking tools. Prototype 4, which used the most complex attributes of policy design tended to capture variability across countries better. However, the testing exercise showed that prototype 3, which used less complex and detailed policy attributes, could also capture variation between countries, while requiring less input from country experts.

Step 2: development of nutrition and physical activity policy benchmarks.

The first version of the benchmarks was produced through a review of the key policy recommendations and the associated evidence base for each policy area included in the NOURISHING and MOVING framework, followed by consultations with two expert working groups. Reviewed literature included policy evaluations collected in the NOURISHING database,<sup>21</sup> key literature on specific

**TABLE 1** Approaches to benchmarking national government nutrition policies

Level of complexity of policy attributes used	Example of nutrition policy benchmarking tool	Indicators and scales used
Presence or absence of recommended policies	Healthy Caribbean Coalition Childhood Obesity Prevention Scorecard (HCC COPS) (2017) <sup>30</sup>  WHO's Global nutrition policy review 2016–2017 (2018) <sup>31</sup>	<i>Indicators</i> ( $n = 15$ ) to measure a country's policy and legislative response to childhood obesity <i>Traffic light scale</i> : Green – policy implemented/present; Orange – partially implemented/under development; Red – not implemented/absent  Online country survey containing four sections: nutrition-related policies, coordination mechanisms, capacities and actions (Survey items [abridged], $n = 42$ ). Results presented as % of surveyed countries ( $n = 179$ )
Single attribute	WHO Global Breastfeeding scorecard (2018) <sup>32</sup>	<i>Single relevant indicator</i> : status of implementation of the Code into legislation <i>Scale red to green – no/voluntary or mandatory (legally binding) implementation</i> . Red - No legal measures: countries have taken no action or have implemented the Code only through voluntary agreements or other non- legal measures Green - Full provisions in law: countries have enacted legislation or adopted regulations, decrees or other legally binding measures encompassing all or nearly all provisions of the Code and subsequent WHA resolutions
Multiple attributes	Benchmarking tool on diet and physical activity policies (2015) <sup>29</sup>  Healthy Food Environment Policy Index (Food-EPI), (2015) <sup>28</sup>	<i>Indicators</i> ( $n = 13$ ) relevant for physical activity & diet policies. For example: measures to improve food and physical activity in schools <i>Scale 0–9</i> For example: 0 – No plans for mandated guidelines or policies in relation to amount of physical activity or the nutritional quality of school food service; 9 – Mandated guidelines and policies in relation to amount of physical activity and the nutritional quality of school food service, with enforcement and monitoring and funded programs to support implementation across all levels of schooling, and guidelines are consistent with national guidelines  <i>Indicators</i> ( $n = 47$ ) on the level of implementation of government policies on food environments. Benchmarked against best practice exemplars selected based on their strength and comprehensiveness. Country expert groups rate each indicator independently. The groups rate the current degree of implementation towards best practice for each indicator on a scale from 1 (<20% implemented compared with international best practice) to 5 (80%–100% implemented compared with international best practice). The mean rating for each indicator is used to categorise the level of implementation against international best practice as 'high' (>75% implemented), 'medium' (51%–75% implemented), 'low' (26%–50% implemented) or 'very little, if any' ( $\leq 25\%$ implemented).

nutrition policy areas, such as front-of-pack labelling, marketing restrictions for unhealthy food and beverages, or health-related food taxes,<sup>36–42</sup> and key reviews on physical activity policy identified for the development of the MOVING policy framework.<sup>13</sup>

Two expert working groups in nutrition and physical activity were convened that included members with expertise in each of the policy

areas. They were academics and policymakers from several European countries, Australia, New Zealand and the USA. For the MOVING benchmarking tool, the working group consisted of nine members, whereas for the NOURISHING benchmarking tool, it consisted of 14 members. The working groups were consulted in writing on the first version of each benchmarking tool. One round of refinement was

**TABLE 2** Approaches to benchmarking national government physical activity policies

Level of complexity of policy attributes used	Example of physical activity policy benchmarking tools	Indicators and scales used
Presence or absence of recommended policies	WHO EURO Physical Activity Fact Sheets (2018) <sup>33</sup>	Presence or absence of recommended policies Presence or absence of selected attributes (e.g., target groups) Scale Y/N (checkmark)
	Bicycling and walking in US 2014/2016 Benchmarking Report (Alliance for Biking and Walking) (2016) <sup>34</sup>	Presence or absence of recommended policies at state level Scale Y/N (checkmark)
Single attribute	GoPA! (Global Observatory for Physical Activity) country cards (2018) <sup>35</sup>	Single relevant policy related indicator – presence of physical activity plan Scale a – no clear plan; b – physical activity embedded as part of NCD plan; c – standalone physical activity plan
Multiple attributes	Benchmarking tool on diet and physical activity policies (2015) <sup>29</sup>	Indicators ( $n = 13$ ) relevant for physical activity. For example: measures to improve food and physical activity in schools Scale 0–9 For example: 0 = No plans for mandated guidelines or policies in relation to amount of physical activity or the nutritional quality of school food service; 9 = Mandated guidelines and policies in relation to amount of physical activity and the nutritional quality of school food service, with enforcement and monitoring and funded programs to support implementation across all levels of schooling, and guidelines are consistent with national guidelines

**TABLE 3** Benchmarking prototypes

Prototype number	Key characteristics
1	Assess the presence or absence of policy
2	Assess the presence or absence of policy actions across all relevant policy areas (presence of a comprehensive approach to nutrition and physical activity policy)
3	Assess the strength of policy by reference to singular attributes (e.g., type of policy action, mandatory/voluntary policy)
4	Assess the quality of policy design defined by multiple policy attributes

Source: Own analysis.

necessary for the NOURISHING benchmarking tool, and two rounds of consultations were necessary for the MOVING benchmarking tool. The comments were incorporated before a joint expert group consultative meeting convened in person.

In the second phase of expert consultation, a joint expert group was convened to carry out an in-depth consultation on the two benchmarking tools. The joint expert group ( $n = 23$ ) consisted of experts in nutrition, physical activity and benchmarking, who were both CO-CREATE partners as well as experts involved in other relevant EU-funded projects. They were academics and policymakers from several European countries, Australia, New Zealand and the USA. In addition, two of the joint expert group members were representatives of United Nation agencies, specifically the United Nations International Children's Emergency Fund (UNICEF) and the WHO Regional Office for Europe. The expert group also included adolescent

representatives, who were key in assessing whether the chosen indicators would capture policy actions that impact adolescents, and embedding a youth perspective in the structure of the benchmarking tools. The adolescent representatives were instrumental in the development of specific attributes that sought to capture when policy actions either targeted adolescents directly or would impact them indirectly.

The joint expert group met in person in February 2019. During the meeting, the evidence base for each policy area included in the NOURISHING and MOVING frameworks was reviewed to develop associated benchmarks. Where there were disagreements among experts with regard to the most appropriate benchmark and associated policy attributes, each element was debated until reaching consensus. For most policy actions, there was consensus amongst experts regarding the appropriate policy attributes. However, for five policy actions there was lacking or insufficient evidence to draw a clear conclusion about aspirational standards and/or experts disagreed about the appropriate attribute based on the existing evidence. The five benchmarks and the outcome decisions are outlined in Table 4.

The consultative process also highlighted the specific characteristics of physical activity policy such as the evidence base and research on physical activity policy being more limited compared with nutrition policy. This is due both to the relative newness of this policy area, as well as to the differences in nature of policy actions. For example, physical activity policy actions are less likely to be regulatory in nature, which had to be reflected in the associated policy attributes.

Throughout the consultative process, experts considered adolescent-sensitive attributes for each policy area and associated benchmarks. For example, attributes that identify when physical activity policies target adolescents were added to most benchmarks in the

**TABLE 4** Overview of lack of consensus during the consultative process

Policy area	Consultations process	Decision
Marketing restrictions on unhealthy foods in or around schools	Insufficient evidence on policy attribute on 'distance from schools' <sup>38</sup>	No distance policy attribute included Alternative attributes added: type of school, power of exposure
Food-based dietary guidelines	Expert disagreement on whether existing international dietary guidelines or recommendations (e.g., WHO) should be used as aspirational standards <sup>43,44</sup>	Existing guidelines were not used as aspirational standards
Reformulation - nutrient targets	Expert disagreement on inclusion of benchmark: a. nutrients included in a list of 'healthy' nutrients b. incentives for unhealthy foods to be reformulated with healthful ingredients	Benchmark removed
Community programmes promoting physical activity	Insufficient evidence for an aspirational standard on appropriate length of programme	Attribute excluded
Physical activity guidelines	Expert disagreement that international recommendations (such as the WHO Physical Activity Guidelines) should be used as aspirational standards <sup>45</sup>	Existing guidelines were not used as aspirational standards

MOVING benchmarking tools, at the suggestion of youth representatives. Benchmarks that target adolescents were also identified for the NOURISHING benchmarking tools, for example in the policy areas of food marketing restrictions or nutrition standards in educational settings.

In addition, members of the joint consultative group also highlighted the need to include policy attributes with equity implications. In the MOVING benchmarking tools, attributes were added to capture policies targeting vulnerable populations and people of all abilities, following recommendations in the WHO Global Action Plan on Physical Activity.<sup>18</sup> In the NOURISHING benchmarking tools, selected policy attributes were added to distinguish when policy actions targeted specific populations, or were part of universal programmes, thus having equity implications. These policy attributes were specific to each policy area, rather than being applied uniformly across the NOURISHING benchmarking tool.

As part of the consultative process, policy attributes on enforcement, funding and monitoring that had been expressly developed as part of policy design were also discussed. While the tool is not designed to capture effective implementation of government action, it was deemed important to assess whether such provisions were included in the intent and design of the policy.

All amendments collected during the expert meeting were included in the final draft of the NOURISHING and MOVING policy benchmarking tools, which was subsequently shared with experts for final approval.

### 3 | STRUCTURE OF THE NOURISHING AND MOVING BENCHMARKING TOOLS

The NOURISHING and MOVING benchmarking tools comprise the following elements: the policy areas, the benchmarks, the indicators, the policy attributes, and a proposed coding scheme. Each policy area is allocated several benchmarks. Each benchmark is

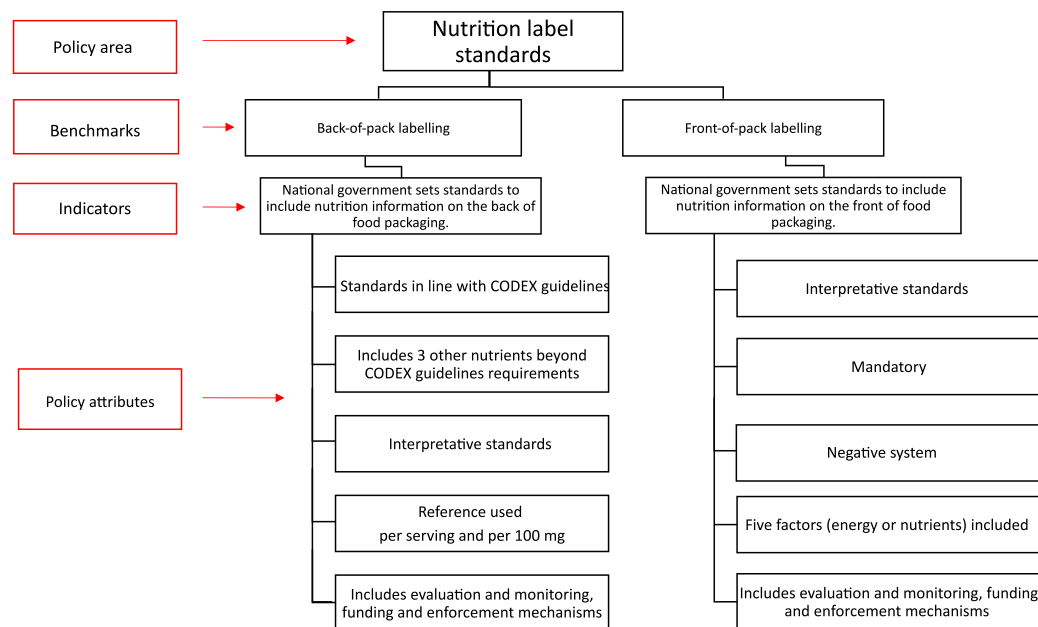
accompanied by an indicator in the form of a statement of government support. The level of government support is then valued based on a minimum of four policy attributes (see Figure 3) and a coding scheme that is currently under refinement. Appendices S2 and S3 present the NOURISHING and MOVING benchmarking tools, simplified for conciseness. The tools can also be consulted in full, upon request, and will be made available online.

Indicators capture national government policy actions that are in full force and implemented. To capture a wide variety of government policy actions, the indicator associated with each benchmark does not specify the type of policy action that should be benchmarked (such as a law, guideline or regulation). This allows the tool to capture a broad range of policy actions across government, including but not restricted to legislation, regulations, decrees, standards, policies, programmes, guidelines, fiscal measures, as well as government-supported voluntary programmes, initiatives and campaigns. As a result, whether the government sets standards, develops guidelines or introduces regulations to limit, for example, marketing of unhealthy foods to children, is identified as part of policy attributes, rather than being pre-defined by indicators.

Each benchmark is graded using a coding scheme that allocates values for each policy attribute. Each indicator is associated with a benchmark and corresponding policy attributes, and each of the attributes receives a unique code that is then used to produce a value for the benchmark. Benchmark values are then combined to create an overall value per country.

### 4 | PILOT TESTING THE BENCHMARKING TOOLS

The NOURISHING and MOVING benchmarking tool underwent extensive pilot testing. First, the tools were piloted on a sample of selected policy actions in the five CO-CREATE countries (Netherlands, Norway, Poland, Portugal and the UK), sourced from



**FIGURE 3** Example of nutrition policy benchmarks for the policy area of nutrition labelling

the NOURISHING and MOVING databases. Among the selected policy actions there were European Union regulations. It was decided that these policies would be benchmarked for each country, if these were adopted by national governments. Gaps or weaknesses were effectively and quickly identified in the policy design of these single government actions. However, the pilot highlighted that each benchmark should be applied to multiple relevant policies at the same time, as several actions can be taken by governments with regard to the same benchmark. Consequently, each benchmark was modified so that the policy attributes could be applied simultaneously to multiple policy actions and would capture the interaction of policy actions within a benchmark and a policy area. This pilot also showed that the tool should be applied independently by two reviewers, followed by a discussion until reaching consensus.

Second, the tools were tested on five full country datasets, not just selected policies, from Norway, Netherlands, Poland, Portugal and the UK. Two reviewers applied the tools independently. The reviewers discussed any discrepancies until a consensus was reached. It was found that attributes regarding implementation considerations such as funding provisions (in the design of the policies) could not be answered consistently, due to variable data availability. As a result, these attributes were excluded from the pilot test. For the remaining attributes, consensus had an average rate of 87% across the policy areas. No policy area had less than 81% consensus. For the remaining attributes that could not be valued due to lack of data in the policy databases, a third expert was consulted that undertook further research on the specific action and policy attribute. It was agreed that this third step should be added as part of the consensus process. Finally, a last stage of verification will be added for testing face validity of the benchmarking tools, whereby

final results will be shared with in-country contacts (from our verification of policies by government experts<sup>20</sup> on the NOURISHING and MOVING databases).

## 5 | DISCUSSION

The NOURISHING and MOVING policy benchmarking tools are monitoring and assessment tools for nutrition and physical activity policy that aim to hold national governments accountable for developing a comprehensive set of policy actions. They are designed to hold countries to an aspirational standard, which is a novel approach compared with existing instruments.<sup>28,29</sup> They can be used by a variety of stakeholders to track government nutrition and physical activity policy actions to prevent and reverse obesity rates across countries and regions. The benchmarking tools consist of a set of indicators and associated policy attributes to assess adolescent-relevant 'policy status' of a country in the areas of promoting healthy nutrition and physical activity. The adolescence-relevance is achieved by inclusion of specific policy attributes that seek to capture when policy actions either targeted adolescents directly or would impact them indirectly.

The NOURISHING and MOVING benchmarking tools are part of a series of instruments for monitoring and assessing nutrition and physical activity national government policy, developed through the CO-CREATE project and outlined in Figure 4. Further, it is envisioned that the two benchmarking tools can supplement and complement existing monitoring initiatives, such as the Food-EPI, which benchmark nutrition policies in more detail, but maintain a focus on existing best practice.<sup>46</sup>

Benchmarking policy is widely promoted as a tool for monitoring progress and for learning about effective policy design from other

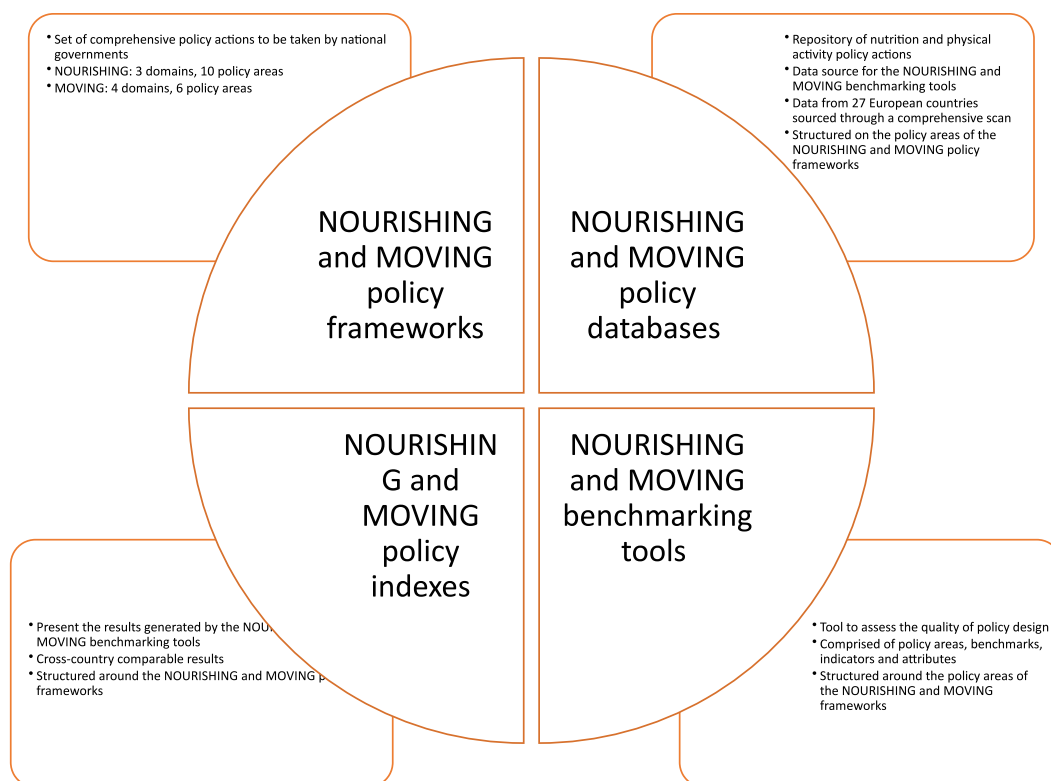
countries.<sup>22</sup> However, some authors have drawn attention to the use of such tools for other purposes, such as advancing specific political objectives of policymaking or as policy advocacy tools.<sup>47</sup> The use of policy benchmarking as an advocacy tool should be acknowledged, used and be considered a strength. For example, global commitments or strategies such as the WHO Global NCD Action Plan seek to increase policy attention to specific policy goals and associated actions as an advocacy objective.

By using aspirational standards, the NOURISHING and MOVING benchmarking tools encourage policy innovation, while also enabling policy learning. Even though the potential for policy learning among governments with regard to policy design will be limited by political realities in specific country contexts, it is well established that examples of policy innovation in one setting can drive policymaking in other settings. For example, the development of the front-of-pack labelling system in Chile was inspired by the 2006 UK system.<sup>48</sup> Interestingly, in 2016, Chile innovated a new front-of-pack labelling model by developing an interpretative label that shows nutrient specific negative judgements and which other countries have used as a source of learning since.<sup>42</sup>

Policy actions on the NOURISHING and MOVING database from 27 European countries will be benchmarked as part of the CO-CREATE project. The policy benchmarks will initially be applied for the European region but are designed to be transferrable to other regions. It is expected that the tool be tested on policies from South Africa in the first instance, on data collected as part of the CO-CREATE project.

One key advantage of the NOURISHING and MOVING benchmarking tools is that they consider the interaction between multiple policy actions and are able to produce a valuation of entire policy areas. At the same time, the benchmark valuation will be done based on the presence or absence of aspirational policy attributes, rather than being based on an expert valuation, as done by other tools.<sup>49</sup> While the repeated application of these tools is not planned currently, the structure and approach of the tools support easy changes to policy attributes in line with emerging evidence in the future.

The results generated by the benchmarking tools will form overall policy indexes for nutrition policy and physical activity policy, whose principles and validation are discussed in a subsequent paper in this supplement.<sup>50</sup> The policy indexes will present results at country level, whereas the benchmarking findings can be disaggregated by policy area for comparative purposes. The policy indexes are necessary because government actions to improve nutrition and physical activity policies are part of an interconnected range of actions, rather than single policies.<sup>12</sup> This means that benchmarking individual policy areas is insufficient to effectively assess the overall status of government policy action. Policy indexes, which facilitate the assessment of a multitude of dimensions relating to a specific policy issue within a single measure,<sup>51</sup> are therefore useful tools to assess complex policy areas, such as nutrition and physical activity, and compare progress across countries. Future plans for using the results of the NOURISHING and MOVING benchmarking tools and associated policy indexes are outlined elsewhere in this Supplement,<sup>50</sup> including further exploration of



**FIGURE 4** Tools for monitoring, benchmarking and comparing national government policy actions in nutrition and physical activity developed as part of the CO-CREATE project



their applicability with actors such as policymakers and civil society groups.

The two benchmarking tools have a series of limitations. First, they only include national level policy actions. The MOVING benchmarking tool is particularly affected by the exclusion of sub-national actions because many important physical activity policies are often implemented by local governments. However, as these tools were designed to monitor government action at national level as well as to ensure comparability between countries, sub-national level policy actions were excluded. As such, they can be used in parallel with existing tools that focus on policy action at sub-national levels,<sup>52</sup> or to guide policy analysis at local levels.<sup>53</sup>

Second, the benchmarking tools focus on government action and therefore exclude other types of policy such as plans or strategies. However, the full spectrum of policymaking could not feasibly be covered, and the tools focus specifically on policy actions within the wider range of public policy. Further, the tools do not give higher weight to policy areas or policy actions that are more likely to have an impact on health inequalities. For example, sugar-sweetened beverage taxes and front-of-pack labelling policies would receive equal weight in the NOURISHING benchmarking tools. This is due to their underpinning policy frameworks (see Figure 4) which take a comprehensive approach. This approach is supported by evidence<sup>54</sup> that no single policy action is sufficient to effectively curb the rise in adolescent obesity and that action is necessary across multiple policy areas.

Third, the feasibility and scope of the project means that policies are only benchmarked to assess their design if currently in effect. Policies have not been assessed as to whether they have been fully rolled out or have been effectively implemented. However, there is great value in evaluating the attributes of policy design, as a first step in holding countries accountable and an important aspect of policy learning among countries. Furthermore, the NOURISHING and MOVING benchmarking tools can complement existing high-quality tools that assess the extent of policy implementation or evaluate policy implementation.<sup>55</sup>

## 6 | CONCLUSION

The MOVING and NOURISHING policy benchmarking tools are a pair of policy tools that bring together a set of indicators and relevant evidence-based, aspirational policy attributes to allow an analysis of countries' progress in nutrition and physical activity policy. They also allow for an assessment of adolescent-relevant policies by identifying whether and when implemented policies target adolescents directly or impact them indirectly. The NOURISHING and MOVING benchmarking tools are innovative in that they set aspirational, rather than best practice, standards. They are part of an important package of tools (Figure 4) that support a range of activities including research, advocacy and policy development and monitoring on nutrition and physical activity policy.

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## CONFLICT OF INTEREST








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## REFERENCES

- World Health Organization. *Noncommunicable diseases: Progress monitor 2022*. Geneva: World Health Organization; 2022.
- World Health Organization. *World health statistics 2020: Monitoring health for the SDGs, sustainable development goals*. Geneva: World Health Organization; 2020.
- World Cancer Research Fund International. *Diet, nutrition, physical activity and cancer: A global perspective: A summary of the third expert report*. London: World Cancer Research Fund International; 2018.
- Murray CJL, Aravkin AY, Zheng P, et al. Global burden of 87 risk factors in 204 countries and territories, 1990–2019: a systematic analysis for the global burden of disease study 2019. *Lancet*. 2020; 396(10258):1223–1249. doi:10.1016/S0140-6736(20)30752-2
- Afshin A, Sur PJ, Fay KA, et al. Health effects of dietary risks in 195 countries, 1990–2017: a systematic analysis for the global burden of disease study 2017. 2019;393(10184):1958–1972. doi:10.1016/S0140-6736(19)30041-8
- World Health Organization. Adolescent health. Accessed 13 July 2022. [https://www.who.int/health-topics/adolescent-health#tab=tab\\_1](https://www.who.int/health-topics/adolescent-health#tab=tab_1)
- Inchley J, Currie D, Budisavljevic S, et al. (Eds). *Spotlight on adolescent health and well-being. Findings from the 2017/2018 health behaviour in school-aged children (HBSC) survey in Europe and Canada. International report. Volume 1. Key findings*. Copenhagen: WHO Regional Office for Europe; 2020.
- World Health Organization. *Adolescent obesity and related behaviours: Trends and inequalities in the WHO European region, 2002–2014: Observations from the health behaviour in school-aged children (HBSC) WHO collaborative cross-national study*. Copenhagen: WHO Regional Office for Europe; 2017. [https://www.euro.who.int/\\_\\_data/assets/pdf\\_file/0019/339211/WHO\\_ObesityReport\\_2017\\_v3.pdf](https://www.euro.who.int/__data/assets/pdf_file/0019/339211/WHO_ObesityReport_2017_v3.pdf). Accessed May 4, 2021.
- Cruz F, Ramos E, Lopes C, Araújo J. Tracking of food and nutrient intake from adolescence into early adulthood. *Nutrition*. 2018;55–56: 84–90. doi:10.1016/j.nut.2018.02.015
- Telama R. Tracking of physical activity from childhood to adulthood: a review. *Obes Facts*. 2009;2(3):187–195. doi:10.1159/000222244
- Norwegian Institute of Public Health. CO-CREATE. Norwegian Institute of Public Health. Accessed 11 Dec, 2020. [www.co-create.eu](http://www.co-create.eu)
- Hawkes C, Jewell J, Allen K. A food policy package for healthy diets and the prevention of obesity and diet-related non-communicable diseases: the NOURISHING framework. *Obes Rev*. 2013;14(Suppl 2): 159–168. doi:10.1111/obr.12098
- Oldridge-Turner K, Kokkorou M, Sing F, et al. Promoting physical activity policy: the development of the MOVING framework. *J Phys Act Health*. 2022;19(4):292–315. doi:10.1123/jpah.2021-0732
- Kilpatrick DG. Definitions of Public Policy and the Law. Accessed 5 August, 2022. <https://mainweb-v.musc.edu/vawprevention/policy/definition.shtml>
- World Health Organization. *Global action plan for the prevention and control of noncommunicable diseases 2013–2020*. Geneva: World Health Organization; 2013.
- World Health Organization. *Tackling NCDs: 'best buys' and other recommended interventions for the prevention and control of noncommunicable diseases*. Geneva: World Health Organization; 2017.
- World Health Organization. *Physical activity strategy for the WHO European region 2016–2025*. Copenhagen: World Health Organization; 2016.
- World Health Organization. *Global action plan on physical activity 2018–2030: More active people for a healthier world*. Geneva: World Health Organization; 2018. <https://apps.who.int/iris/bitstream/handle/10665/272722/9789241514187-eng.pdf>. Accessed December 11, 2020.
- World Cancer Research Fund International. *Methods document for policy scan – Technical annex*. London: World Cancer Research Fund International; 2021. <https://www.wcrf.org/policy/policy-databases/methodology/>. Accessed December 10, 2020.
- World Cancer Research Fund International. *NOURISHING & MOVING methods document*. London: World Cancer Research Fund International; 2021. <https://www.wcrf.org/policy/policy-databases/methodology/>. Accessed December 10, 2020.
- NOURISHING and MOVING policy databases. World Cancer Research Fund International Web site. <https://policydatabase.wcrf.org>. Accessed December 11, 2020.
- Paasi M. Collective benchmarking of policies: an instrument for policy learning in adaptive research and innovation policy. *Sci Public Policy*. 2005;32(1):17–27. doi:10.3152/147154305781779669
- Vandevijvere S, Swinburn B. 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*. 2014;4(5):e005339. doi:10.1136/bmjopen-2014-005339
- World Health Organization. *WHO report on the global tobacco epidemic, 2017: Monitoring tobacco use and prevention policies*. Geneva: World Health Organization; 2017.
- Brinsden H, Lobstein T, Landon J, et al. Monitoring policy and actions on food environments: rationale and outline of the INFORMAS policy engagement and communication strategies. *Obes Rev*. 2013;14(Suppl 1):13–23. doi:10.1111/obr.12072
- Physical activity. World Health Organization Web site. <https://www.who.int/news-room/fact-sheets/detail/physical-activity>. Published November 26, 2020. Accessed May 4, 2021.
- Varela AR, Pratt M, Powell K, et al. Worldwide surveillance, policy, and research on physical activity and health: the Global Observatory for Physical Activity. *J Phys Act Health*. 2017;14(9):701–709. doi:10.1123/jpah.2016-0626
- Swinburn B, Vandevijvere S, Kraak V, et al. Monitoring and benchmarking government policies and actions to improve the healthiness of food environments: a proposed Government Healthy Food Environment Policy Index. *Obes Rev*. 2013;14(Suppl 1):24–37.
- 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 Pract*. 2014;8(4):e388–e398. doi:10.1016/j.orcp.2013.07.001
- Childhood Obesity Prevention Scorecard. Healthy Caribbean Coalition Web site. <https://www.healthycaribbean.org/cop/cop-scorecard.php>. Accessed 16 October 2022.
- World Health Organization. *Global nutrition policy review 2016–2017: Country progress in creating enabling policy environments for promoting healthy diets and nutrition*. Geneva: World Health Organization; 2018.
- World Health Organization. *Global breastfeeding scorecard, 2018: Enabling women to breastfeed through better policies and programmes*. Geneva: World Health Organization; 2018.
- World Health Organization. *Physical activity factsheets for the 28 European Union member states of the WHO European region*. Copenhagen: World Health Organization Regional Office for Europe; 2018.

34. League of American Bicyclists. *The benchmarking report on bicycling and walking in the United States 2016*. Washington, DC: League of American Wheelmen; 2016.
35. Country Cards. Global Observatory for Physical Activity. Accessed 10 March, 2021. <http://www.globalphysicalactivityobservatory.com/country-cards/>
36. World Cancer Research Fund International. *Building momentum: Lessons on implementing robust restrictions of food and non-alcoholic beverage marketing to children*. London: World Cancer Research Fund International; 2020. <https://www.wcrf.org/policy/our-publications/building-momentum-series/lessons-implementing-robust-restrictions-marketing-children/>. Accessed December 11, 2020.
37. World Cancer Research Fund International. *Building momentum: Lessons on implementing a robust sugar sweetened beverage tax*. London: World Cancer Research Fund International; 2018. <https://www.wcrf.org/policy/our-publications/building-momentum-series/lessons-implementing-robust-sugar-sweetened-beverage-tax/>. Accessed December 11, 2020.
38. World Health Organization. *Evaluating implementation of the WHO set of recommendations on the marketing of foods and non-alcoholic beverages to children: Progress, challenges and guidance for next steps in the WHO European region*. Copenhagen: WHO Regional Office for Europe; 2018.
39. World Health Organization. *A framework for implementing the set of recommendations on the Marketing of Foods and non-alcoholic beverages to children*. Geneva: World Health Organization; 2012.
40. Kelly B, Jewell J. *What is the evidence on the policy specifications, development processes and effectiveness of existing front-of-pack food labelling policies in the WHO European region?* Copenhagen: WHO Regional Office for Europe; 2018.
41. World Health Organization. *Fiscal policies for diet and prevention of noncommunicable diseases: Technical meeting report, 5–6 may 2015, Geneva, Switzerland*. Geneva: World Health Organization; 2016. <https://www.who.int/dietphysicalactivity/publications/fiscal-policies-diet-prevention/en/>. Accessed December 11, 2020.
42. World Cancer Research Fund International. *Building momentum: Lessons on implementing a robust front-of-pack food label*. London: World Cancer Research Fund International; 2019. <https://www.wcrf.org/policy/our-publications/building-momentum-series/lessons-implementing-robust-front-of-pack-food-label/>. Accessed December 15, 2020.
43. Herforth A, Arimond M, Álvarez-Sánchez C, Coates J, Christianson K, Muehlhoff E. A global review of food-based dietary guidelines. *Adv Nutr*. 2019;10(4):590-605. doi:10.1093/advances/nmy130
44. Mann J, Morenga LT, McLean R, et al. Dietary guidelines on trial: the charges are not evidence based. *Lancet*. 2016;388(10047):851-853. doi:10.1016/s0140-6736(16)31278-8
45. World Health Organization. *Global recommendations on physical activity for health*. Geneva: World Health Organization; 2010. <https://www.who.int/publications/i/item/9789241599979>. Accessed December 11, 2020.
46. Vandevijvere S, Barquera S, Caceres G, et al. 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*. 2019;20(Suppl 2):57-66. doi:10.1111/obr.12819
47. Dominique KC, Malik AA, Remoquillo-Jenni V. International benchmarking: politics and policy. *Sci Public Policy*. 2013;40(4):504-513. doi:10.1093/scipol/scs128
48. Reyes M, Garmendia ML, Olivares S, Aqueveque C, Zacarías I, Corvalán C. Development of the Chilean front-of-package food warning label. *BMC Public Health*. 2019;19(1):906. doi:10.1186/s12889-019-7118-1
49. Sacks G, Kwon J, Vandevijvere S, Swinburn B. Benchmarking as a public health strategy for creating healthy food environments: an evaluation of the INFORMAS initiative (2012–2020). *Annu Rev Public Health*. 2021;42(1):345-362. doi:10.1146/annurev-publhealth-100919-114442
50. Fisman A-S, Mathisen JR, Vlad I, et al. Pilot test of the NOURISHING policy index—Assessing governmental nutrition policies in five European countries. *Obes Rev*. 2023;e13532. doi:10.1111/obr.13532
51. Surminski S, Williamson A. Policy indexes as tools for decision makers: the case of climate policy. *Global pol*. 2014;5(3):275-285. doi:10.1111/1758-5899.12121
52. Giles-Corti B, Moudon AV, Lowe M, et al. Creating healthy and sustainable cities: what gets measured, gets done. *Lancet Glob Health*. 2022;10(6):e782-e785. doi:10.1016/S2214-109X(22)00070-5
53. Penn-Newman D, Shaw S, Congalton D, et al. How well do national and local policies in England relevant to maternal and child health meet the international standard for non-communicable disease prevention? A policy analysis. *BMJ Open*. 2018;8(11):e022062. doi:10.1136/bmjopen-2018-022062
54. World Health Organization. *WHO European regional obesity report 2022*. Copenhagen: World Health Organization Regional Office for Europe; 2022.
55. Phulkerd S, Lawrence M, Vandevijvere S, Sacks G, Worsley A, Tangcharoensathien V. A review of methods and tools to assess the implementation of government policies to create healthy food environments for preventing obesity and diet-related non-communicable diseases. *Implement Sci*. 2016;11(1):15. doi:10.1186/s13012-016-0379-5

## SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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