THRIVING Food Futures: Nutrient and Environmental Profiling Model (NEPM) Expert Working Group (EWG) meeting minutes
2nd June 2025, 1pm – 4pm, Microsoft Teams and Queen Mary University of London,

Attendees	
NEPM EWG members	**Role**
Alison Tedstone (Chair of the Expert Working Group)	Former National Director of Diet, Obesity and Physical Activity at Public Health England
Victor Aguilera	Food Systems Sustainability Lead, Department of Environment, Food and Rural Affairs
Tazeem Bhatia	Deputy Director of Diet, Obesity and Healthy Behaviours and Chief Nutritionist, Department of Health and Social Care
Sandra Bogelein	Lead Analyst, People and Net Zero, Climate Change Committee
Hannah Brinsden	Head of Policy and Advocacy, The Food Foundation
Andy Cole	Director for Northern Ireland, Food Standards Agency
Peter Faasen de Heer	Senior Policy Manager for Tobacco, Gambling, Diet and Healthy Weight Unit, Directorate of Population Health, Scottish Government
Ann Humble	Head of Strategic Analysis, Environment and Rural Affairs Department, Welsh Government
Susan Jebb	Professor of Diet and Population Health, Oxford University and Chair, Food Standards Agency
Ilona Johnson	Consultant in Public Health, Public Health Wales
Alana McDonald	Senior Public Health Nutrition Advisor, Food Standards Scotland
Megan Tresise	Associate Specialist, Greenhouse Gases, WRAP
Project team members	**Role**
Fran Bernhardt	Commercial Determinants Co-ordinator, Sustain
Hannah Forde	Wellcome Trust Research Fellow and Senior Researcher, University of Oxford
Trisha Gordon	Administrator, University of Oxford
Asha Kaur	Senior Researcher, University of Oxford
Mike Rayner	Professor of Population Health, University of Oxford
Barthelemy Sarda	Researcher, University of Oxford
Peter Scarborough	Professor of Population Health, University of Oxford
Ruth Westcott	Campaign Manager, Sustain
Apologies	
None received	

Abbreviations

NPM = Nutrient Profiling Model
EPM = Environmental Profiling Model
NEPM = Nutrient and Environmental Profiling Model
EWG = Expert Working Group
COI = Conflict of Interest
THRIVING = Transdisciplinary Health Research to Identify Viable Interventions for Net zero Goals research hub
HFSS = High in fat, sugars or salt

1. **Welcome and introductions**

- The expert working group (EWG) and project team members introduced themselves.
- Attendees were asked to disclose any conflicts of interest. None were declared.
- The minutes will be anonymised and posted on the THRIVING research hub website.

2. Overview of the project (PS)

- PS gave an overview of the THRIVING research hub and of the NEPM research project that is one of the THRIVING projects.
- THRIVING is funded for 5 years by NIHR and UKRI. It is led by the University of Oxford in partnership with the University of Cambridge, the University of Strathclyde, the University of Warwick, Queen Mary University London City St George's University London and Sustain: the alliance for better food and farming.
- The NEPM development phase will last for 18 months.

- PS outlined the agenda for the meeting.

- PS presented a draft definition for an NEPM: "The science of classifying or ranking foods according to their characteristics for reasons related to promoting health and reducing the environmental impact of the food system". This based on the World Health Organisation's definition of nutrient profiling.
- He noted that the aim of THRIVING is not only to identify ways of reducing demand for unhealthy foods but also foods with a high environmental impact.

- PS noted that it has been agreed that the *process* of developing the NEPM should be based on that of the UK NPM- an algorithm to distinguish between HFSS and non-HFSS foods. The UK NPM was originally developed and published in 2004/5 and revised in 2018, although the 2018 version has not yet had ministerial approval. The process of developing the UK NPM had buy-in from policy makers and drafts of the models were subject to much consultation.
- The UK NPM has been picked up and used by policymakers to underpin various national and international policies. It has stood up to scrutiny and has been tested in the courts.

- PS then outlined the plan for the development of the NEPM. This is essentially for the EWG to come up with a range of possible models and for the Project Team to test those models against food datasets. There will be several rounds of this before, hopefully, arriving at a final model.

- PS outlined the nature of the data that are available for testing models. The environmental data, for this project will mainly come from a dataset (now open source) used for a paper by Poore and Nemecek[1] and the more recent HESTIA dataset[2]. Bother of these datasets have lifecycle assessments for different foods/commodities based on a comprehensive review process.

- He discussed a 57,000 food dataset used for a paper by Clark et al published in PNAS[3] The environmental data for that dataset comes from the Poore and Nemecek dataset. Clark's dataset links ingredient information with food commodities for which there is life cycle assessment information in the Poore and Nemecek dataset, Mike Clark's dataset estimates the amount of

[1] Poore J, Nemecek T. Reducing food's environmental impacts through producers and consumers. Science. 2018 Jun 1;360(6392):987-992. doi: 10.1126/science.aaq0216. Erratum in: Science. 2019 Feb 22;363(6429):eaaw9908. doi: 10.1126/science.aaw9908. PMID: 29853680.

[2] https://www.hestia.earth/

[3] M. Clark, M. Springmann, M. Rayner, P. Scarborough, J. Hill, D. Tilman, J.I. Macdiarmid, J. Fanzo, L. Bandy, & R.A. Harrington, Estimating the environmental impacts of 57,000 food products, Proc. Natl. Acad. Sci. U.S.A. 119 (33) e2120584119, https://doi.org/10.1073/pnas.2120584119 (2022).

each ingredient in each product using an algorithm (which has been validated against approx. 130 products for which there is complete information).

- For the NEPM project we propose to apply prototype models to Clark's 57,000 food data set. Then, following the methods used for the development of the UK NPM 2004/5, we will develop a set (s) of 100 - 150 commonly consumed foods, and apply prototype models to this/these sets of indicator foods to asses, qualitatively, how the models perform
- There was some discussion about the numbers of sets of indicator foods and the number of foods in each set. It was noted that for the revision of the UK NPM (the UK NPM 2018) the set of indicator foods consisted of 1000 foods. It was agreed that more consideration needed to be given to developing the set or sets of indicator foods for testing prototype models

3. Q&A

- It was noted that there is a risk that food policies that aim to promote healthy and sustainable diets will be developed in the UK in the absence of an appropriate NEPM, The UK NPM has been crucial for supporting policies in the UK and beyond.

- Is the starting point for this project the UK NPM specifically or just the lessons learnt during its development? This is something the EWG will have to decide.

- Can we learn anything from the way the UK NPM achieved buy-in from policy makers and incorporation into legislation? It was noted that the Oxford Team had been commissioned and funded by the Government (the FSA) to help develop the original UK NPM 2004/5 for a specific policy purpose. This time the Oxford Team have been funded by NIHR and UKRI to develop the NEPM as a research project. This is an important difference between the two processes.
- It was also noted, at this point, that there had been no ministerial agreement for the publication of the updated version of the UK NPM. It could be that there have been too many external factors affecting ministers attention, and/or there has been active opposition to the updates to the model - particularly the substitution of total sugars for added sugars in the algorithm

- Does Clark's 57,000 food dataset distinguish between products from the UK vs elsewhere? Not currently, but this is an adaptation which could be explored depending on decisions about environmental impacts to be included in the model. The underlying data from Poore and Nemecek does identify location of production.

- Has there been criticism of the Clark's 57,000 food dataset? There was some criticism from the Agriculture and Horticulture Development Board (AHDB) but mostly their criticisms amounted to limitations that are openly reported in the PNAS paper. The biggest criticism of the dataset is that it provides global averages and not UK specific data for foods. The PNAS paper has also been criticised for not reflecting new regenerative agriculture approaches but it is difficult to see how it could have done given the lack of data on the impact of these new approaches.

4. Review of Terms of Reference (TOR) for the Expert Working Group and Conflicts of Interests (COI) form

- The TOR will not be published immediately but will be made available, after finalising, upon reasonable request.
- The names of EWG members (and their organisation) will be published on the project website together with a statement that 'Members of the Expert Working Group are contributing in a personal capacity and their views and opinions do not necessarily represent their organisations'.

- Further EWG meetings will be held online every 2 - 3 months.
- The reference to a confidentially statement will be removed from the TOR (page 2).
- The statement that "The EWG will advise on what constitutes a healthy and sustainable diet for the purposes of this project)" (page 2 of the TOR) will be deleted. Instead, the Project Team will draw upon existing definitions of a healthy and sustainable diet as background for this project.
- The paragraph beginning "An important task of the EWG will be to rank a panel of ~120 foods…" (page 2 of the TOR) will be improved. "Rank" will be changed to "assess", "evaluate" or "categorise".
  ACTION POINT: PS to redraft the TOR and revise the paper headed 'Membership of Expert Working Group and Project Team'

- EWG Members agreed that the COI form (based on the WHO's COI form) is difficult to complete.
  ACTION POINT: PS to redraft the COI form with more open as opposed to closed questions. Completed forms are to then be sent to PS and TG.

5. Ten questions that we must answer to build the NEPM (MR)

MR gave a presentation on the ten questions that must be answered to build the NEPM. He stressed that these questions didn't need to be answered at the current meeting

5a. General questions

Q1. What do we mean by an NEPM/are we happy with the proposed definition?

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Q2. What should be the purpose of the model?

- I.e. the application/policy use. Thus far NPMs have most been used for food labelling and marketing restrictions
- The UK NPM was originally planned for multiple purposes, but it was rapidly decided that it should be for a single purpose – advertising directed at children on TV
- Should the NEPM be for single or multi-purpose use?
- Note that the purpose of the model has some effect on the algorithm, e.g. you may need a binary outcome (e.g. for advertising restrictions), or a range of scores (e.g. for food labelling).
- There are lessons to be learnt from the NPM experience.

Q3. What population should the model be for?

- I.e. In terms of age and geography
- The UK NPM was originally developed as a tool for the UK but has been adapted for use elsewhere.
- The UK NPM was also originally developed for applications aimed at children, but is now used for applications aimed at adults and children (over the age of two).

Q4, What should be the scope of the model?

- I.e. what foods are covered
- The UK NPM applies to all food and non-alcoholic drinks but with a few exceptions such as foods for infants
- Exemptions have narrowed its scope for some recent policies
- Sometimes NPMs only include packaged not unpackaged foods, but this means that they do not cover most foods sold in catering outlets

- Should the NEPM include alcohol, unpackaged foods, etc?
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Q5 Do we build a new model from scratch or adapt an existing model or models?

- WHO recommends adapting rather than starting from scratch.
- Adapting models is quicker than starting from scratch.
- Some adaptations (e.g. subdividing categories) are easier to make than others
- The process of adapting a model involves:
  - Reviewing existing models
  - Selecting a model or models
  - Selecting and making adaptations (scope, categories, reference amount, component, numbers)
  - Applying model to a food database

Q6 Should the model be 'across-the-board' or 'category-specific'

- I.e. is the model intended to signal better foods within categories or across all categories?
- Depends on the purpose
- The UK NPM is 'across the board' but has two categories - foods and drinks.
- There are many technical difficulties in defining more categories that that.

5b. Technical questions:

Q7. What components, aspects and environmental impacts of foods should the model take into account?

- Health related components include: energy, nutrients, ingredients, additives, pesticides; aspects include, method of production, level of processing; environmental impacts include: greenhouse gas emissions, land use, water use, water quality, species diversity
- Number of health-related components, etc, can be many or few
- Choice of components, etc. can be for a variety of reasons

Q8. What functional unit/reference amount should the model use?

- Potential functional units include 100g, 100kJ, a serving, 100g of protein, or a combination
- Different functional units have different advantages and disadvantages
- Most favour 100g/100ml for NPMs and EPMs
- Serving sizes are very difficult to define

Q9. On what basis should the points be awarded and thresholds set?

- For the UK NPM points are scored relative to Guideline Daily Amounts (in turn based on population based nutrient recommendations) and different components are weighted differently.
- The UK NPM was updated in 2018 primarily in order to take account of new Government recommendations for sugars and fibre
- Similar issues for EPMs as for NPMs. E.g. Institute of Grocery Distribution (IGD) for its Environmental Labelling Scheme, uses planetary boundaries converted to 'daily per capital sustainable impacts' and then EU Product Environmental Footprint (PEF) weightings.

Q10, How do we combine health and the environment?

- Do we keep environment and /health separate or combine to give an overall score?

- Sus-health labelling scheme is an example of where an NPM score and an EPM score have been kept both separate and combined (by averaging the NPM and EPM score).

6.Discussion

6a General principles

- There was a discussion about the UK NPM forming the basis of the NEPM. It was agreed that there would need to be an extraordinarily good reason to change what has been done already in developing and updating the UK NPM. It was agreed that the UK NPM should form the basis of the NEPM. It was agreed that both 2004/5 and the 2018 models should be kept on the table at this point.
- It was generally agreed that the technical details for the NEPM should be kept separate from policy decisions about the application of the model (e.g. exemptions to the scope of the model, the thresholds for the red, amber and green ratings of a food labelling scheme based on the model, etc.)
- It was further agreed that the nutrient and environmental parts of the model should be kept separate for the time being, but that it would be helpful to understand what the options for merging them might be.

6b Purpose of the model and of the project

- Multiple v single purposes for the model were discussed. It was noted that reformulation could be one purpose, co-ordinated reporting on company performance (e.g. as proposed by the Food Data Transparency Partnership (FDTP)) could be another. It was agreed the NEPM could and should have multiple purposes.
- It was stressed that the role of the EWG was to focus on the algorithm rather than its expression (e.g. the presentation/format of labelling schemes using the model, etc.).

6c. Alignment with other related work

- It was noted that the EU/UK reset and the UK Governments aspiration to move closer to Europe might have implications for the project
- It was noted that project should be aligned, as far as possible, with UK Government developments (e.g. Defra's Food Data Transparency Partnership (FDTP) Eco Working Group). Some of the THRIVING research hub' researchers (Mike Clark, Joseph Poore) are involved in those initiatives.

6d Technical issues

- The agreement that the UK NPM should form the basis of the NEPM could answer some of the other questions raised by MR e.g. the population the NEPM is for (the UK NPM is for initiatives aimed at everyone aged 2 and over) the reference amount for the NEPM (the UK NPM has a reference amount of 100g/100ml) etc.

a) Scope

- It was noted that recent policies provided for exemptions to the UK NPM and in effect narrowed its scope. It was generally agreed that that there is a need to separate out the technical base to the model from its policy application like exemptions to the model.

b) Environmental impacts

- There was a discussion about which environment impacts the NEPM should consider.
- The Waste & Resources Action Programme (WRAPs) experience of working with the Institute of Grocery Distribution (IGD) on environmental labelling was briefly described. IGD's current proposal for what is in effect an EPM for their proposed environmental labelling scheme is for Greenhouse Gas (GHG) emissions, land use, water use and water pollution. The IGD EPM does not include impacts on biodiversity for reasons related to measurement. GHG emissions, land use, water use and water pollution are captured well in the Poore and Nemecek database.
- The EWG wanted to know more about the selection of these impacts and how they will be measured.
- There was support for the idea that the environmental side of the NEPM should include more than one and possibly several environmental impacts. It was noted that that in the development of the UK NPM there were calls for the inclusion of a large number of nutrients and other components and that these were eventually reduced to seven. There reaches a point where there is little marginal benefit of adding in to another element to an NPM or EPM (especially if those metrics are correlated).
- It was noted that there are data availability considerations when developing NPMs, EPMs and NEPMs. For some elements there are also measurement issues. There is much uncertainty about how to measure biodiversity. It was noted that 'data deficiency' is used as an argument by some who oppose measures to promote the healthiness and sustainability of diets.
- It was agreed that documentation for this project will be very important, cataloguing why, for example, some environmental impacts have been included and some not.
- It was agreed that the Project Team should draft a paper with options for the environmental impacts to be included in the NEPM and how they should be measured.

c) Reference amount

- The UK NPM has a reference amount of 100g. IGD's current proposal for their environmental labelling scheme is for a reference amount of 100g. It was generally agreed that the reference amount for the NEPM should be 100g,

d) Type of model.

- Scoring models, like the UK NPM, are more flexible, when it comes to their application, than simple threshold models which just give binary outputs such as healthier and less healthy, It was generally agreed that the NEPM should be a scoring model rather than simply a threshold model.

6e. Animal welfare

- The issue of animal welfare was raised and the similarities and differences between the impact of food production and consumption on animal welfare with human and planetary health briefly discussed It was agreed that some consideration would be given to animal welfare in the Project Team's paper on options for the environmental impacts to be included in the NEPM.

7. Summary of Discussion

- There was agreement that:
    - The NEPM should
        - Be developed as a multi-purpose model.
        - Use the UK NPM as its basis
            - Keeping both the 2004/5 and the 2018 models on the table
        - Therefore be for policy applications for the whole of the UK
    - The nutrient and environmental aspects of the NEPM should be kept separate (as a starting point)
- It was generally agreed that decisions about the technical details for the NEPM should be kept separate from policy decisions about the application of the model (e.g. exemptions to the scope of the model, the thresholds for the categories of a food labelling scheme based on the model, etc.)
- It was agreed that the Project Team should draft a paper with options for the environmental impacts to be included in the NEPM and how they should be measured.
  ACTION POINT: The Project Team will draft a paper on environmental impacts for consideration by the next meeting of the EWG

8. **Review of EWG membership (all)**

- The EWG discussed potential additions to the EWG. This included Professor EJ Milner-Gulland (https://www.biology.ox.ac.uk/people/ej-milner-gulland)

9. **AOB and date of next meeting**

- The next meeting will be held in October or November 2025. The meeting will last up to three hours and will be held online.
  ACTION POINT: PS/TG to circulate a doodle poll for dates in October and November. Attendees are asked to hold both dates until a final date is confirmed later in the year.

Action points	Person
Redraft the COI form	PS
Send COI forms to PS and TG	ALL
Redraft the TOR in light of feedback received during the meeting	PS
Draft a paper on environmental impacts	Project Team
Circulate doodle poll for a meeting date in October and November	PS/TG