

# Implementation level of best practice policies by Italian Government for healthier food environments: Healthy Food Environment Policy Index (Food-EPI)

Drieda Zaçe<sup>1</sup>, Andrea Di Pilla<sup>1</sup>, Marco Silano<sup>2</sup>, Elettra Carini<sup>1</sup>, Pasquale Cacciatore<sup>1</sup>, Emanuela Maria Frisicale<sup>1</sup>, Stefanie Vandevijvere<sup>3</sup>, Franco Sassi<sup>4</sup> and Maria Lucia Specchia<sup>1</sup>

<sup>1</sup>Dipartimento Universitario di Scienze della Vita e Sanità Pubblica, Università Cattolica del Sacro Cuore, Rome, Italy

<sup>2</sup>Dipartimento Sicurezza Alimentare, Nutrizione e Sanità Pubblica Veterinaria, Istituto Superiore di Sanità, Rome, Italy

<sup>3</sup>Department of Epidemiology and Public Health, Scientific Institute of Public Health (Sciensano), Brussels, Belgium

<sup>4</sup>Imperial College of Science, Technology and Medicine, London, UK

## Abstract

**Background.** This work aims to identify policies implemented for healthy food environments in Italy within The Healthy Food Environment Policy Index (Food-EPI) project.

**Methods.** Food-EPI tool, which includes two components, thirteen domains and fifty good practice indicators, was adapted for the Italian context. Evidence for implementation was gathered and summarized for all fifty indicators from data sources such as governmental websites, non-government organizations publications and websites and via direct contact with Government officials.

**Results.** The highest level of evidence was found within five domains: *food composition* (2/2 indicators), *labelling* (3/4), *promotion* (4/5), *provision* (4/5) and *leadership* (5/5). The domains with less identified evidence were *food prices* (1/4), *food in retail* (0/4), *trade and investment* (0/2) and *platforms and interaction* (1/4).

**Conclusions.** The evidence summarization and the upcoming stakeholders' meeting to rate the level of implementation for each indicator in Italy have the potential to improve Government commitment to shape healthier food environments.

## Key words

- nutrition policy
- food
- food environments
- obesity
- policy implementation

## INTRODUCTION

Overweight and obesity represent an increasing health problem worldwide [1]. These conditions have been associated with a number of non-communicable diseases [2] and higher all-cause mortality in several countries [3]. An important role in the increase of this phenomenon is played by unhealthy food environments which are a major driver of unhealthy population diets and obesity [4, 5].

Individuals interact with the environment in multiple settings, such as schools, homes and neighbourhoods, which are influenced by the education and health systems, Government, the food industry and a society's attitudes and beliefs [6]. Food environments are con-

trolled by higher-level instances and less by individuals. In this context, effective Government policies and actions are essential to increase the healthiness of food environments and to reduce the high levels of obesity, non-communicable diseases (NCDs) and all-cause mortality related to it [7]. Therefore, it is of utmost importance that Governments implement widely recommended preventive policies and actions to address the magnitude of the burden that unhealthy diets are creating [8].

Monitoring the degree of implementation of these widely recommended policies and actions is an important part of ensuring progress towards better population nutritional health [9].

In this context the International Network for Food and Obesity/Noncommunicable diseases Research, Monitoring and Action Support (INFORMAS) was created. INFORMAS is a global network of public-interest organizations and researchers that aims to monitor, benchmark and support public and private sector actions to create healthy food environments and reduce obesity, NCDs and their related inequalities. Key aspects of food environments are monitored over time and between countries, contributing to strengthening the accountability of Governments and the private sector for the impact of their policies and actions on food environments, obesity and NCDs. To do this, INFORMAS has developed a tool, the Healthy Food Environment Policy Index (Food-EPI) [8], to assess the extent of implementation of recommended food environment policies by national Governments compared to international best practice [10]. The Food-EPI tool and process have been through several phases of development, including a review of literature and policy documents, subsequent revision by a group of international experts from low-, middle- and high-income countries, and pilot testing. It has been pilot-tested [11] and used in different contexts to identify actions taken by Governments regarding policy implementation for healthy food environments [12-16].

The Food-EPI tool is part of the Science & Technology in childhood Obesity Policy (STOP) project, which is a European Commission-funded Horizon 2020 project, aiming to expand and consolidate the multidisciplinary evidence base upon which effective and sustainable policies can be built to prevent and manage childhood obesity. Based on the Food-EPI tool, in collaboration with the Italian National Health Institute (Istituto Superiore di Sanità, ISS), which is partner of the STOP project, we collected information and evidence for each indicator concerning the Italian context. The aim was to identify any actions taken by the Italian Government at the level of policy implementation for healthy food environments in Italy, which could serve as ground for subsequent rating and benchmarking the implementation of each policy with reference to international best practices, in order to make prioritized recommendations based on the identified gaps.

## METHODS

The present study was carried out in two different steps. The first step included a narrative review to identify and collect pertinent documents concerning policy implementation for healthy food environments and benchmarks. The collected information was then sent to experts from the National Health Institute for validation. The second step consisted of a pilot study to measure the comprehensibility of the summarized information and easiness in conducting the rating process.

### Search strategy

Institutional and non-institutional websites were searched by a team of five researchers on three levels: international, national and regional. At the international level websites of organizations such as World Health Organization, European Union and European

Parliament were searched to look for pertinent policies and actions that were adapted and implemented by the Italian Government. At the national level websites of institutions such as Ministry of Health, Ministry of Economic Development, Ministry of Agricultural, Food and Forestry Policies, Ministry of Education and National Health Institute, National Center for Diseases Prevention and Control (Centro Nazionale per la Prevenzione e il Controllo delle Malattie, CCM) were searched.

Furthermore, the websites of different non-profit organizations, scientific societies and food industries such as Italian Society of Human Nutrition (Società Italiana di Nutrizione Umana, SINU), National Agency for Regional Health Services (Agenzia Nazionale per i Servizi Sanitari Regionali, AGENAS), National Institute for the Promotion of the Health of Migrant Populations and for the Fight of Poverty Diseases (Istituto Nazionale per la Promozione della Salute delle Popolazioni Migranti e per il Contrasto delle Malattie della Povertà, INMP) Gaining Health, WHO Healthy Cities Network were explored. At the regional level, the websites of several municipalities were searched looking for initiatives, actions or policies implemented at a local level. The keywords used to search for pertinent documents were: policy; Government; Italy; national; regional; strategies; actions; implementation; initiatives; food composition; food labelling; food promotion; food prices; food provision; food retail; food trade; food investment; infrastructure; leadership; governance; food monitoring; funding; resources.

### Definitions

For the purpose of this work the following definitions were used [11].

*Food:* food and non-alcoholic beverages, excluding breastmilk or breastmilk substitutes. *Food environments:* the collective physical, economic, policy and socio-cultural surrounding, opportunities and conditions that influence people's food and beverage choices and nutritional status.

*Government:* any Government departments and, where appropriate, other agencies (i.e., statutory bodies such as offices, commissions, authorities, boards, councils, etc.).

*Government implementation:* the intentions and plans of the Government and actions and policies implemented by the Government as well as Government funding for implementation of actions undertaken by non-governmental organizations, academic institutions, private companies (including consultants), etc.

*Healthy/unhealthy food:* categorization of foods as healthy/unhealthy in accordance with the WHO and EU guidelines or informed by rigorous criteria or the use of a nutrient profiling model.

*Nutrients of concern:* salt (sodium), saturated fat, trans fat, added sugar.

*Systems-based approaches:* a set of common objects or people and the relationships and interactions that make them part of a larger whole, working together towards a common purpose.

*Policy actions:* all Government policies, plans, strate-

gies and activities (evidence of policy implementation took into consideration the whole policy cycle, from agenda-setting, through to policy development, implementation and monitoring).

A strict collaboration and several consultations were conducted with experts from the National Health Institute during the research of websites and evidence collection process. The evidence collection was structured in several rounds, after each of which there was a feedback and evaluation from the National Health Institute expert.

### **Evidence compilation and synthesis**

The Food-EPI tool is comprised of two components: *policies*, which is comprised of seven domains and *infrastructure support*, which is comprised of six domains. Each domain includes several indicators of good practice for a total of 50 indicators. The domains of the *policies* component are: *food composition* (2 indicators), *food labelling* (4 indicators), *food promotion* (5 indicators), *food prices* (4 indicators), *food provision* (5 indicators), *food retail* (4 indicators) and *food trade and investment* (2 indicators). The domains of the *infrastructure support* component are: *leadership* (5 indicators), *governance* (4 indicators), *monitoring and intelligence* (6 indicators), *funding and resources* (3 indicators), *platforms and interaction* (4 indicators) and *health in all policies* (2 indicators). An evidence document on the current degree of implementation of all 50 good practice *policy* and *infrastructure support* indicators across 13 domains was compiled from documents retrieved from institutional and non-institutional websites that were searched. Summaries of evidence of implementation in Italy, international best practice benchmarks and progress until March 2020 were compiled for each indicator. The international benchmarks were retrieved by the documents provided by INFORMAS and Food-EPI international group [16]. Five researchers worked independently to extract the relevant information from each document and synthesized it. For a summary of each document concerning each indicator see *Supplementary Material available online*.

### **Evidence verification**

The evidence was comprehensively documented and returned to Government officials at the Ministry of Health to verify its completeness and accuracy. They gave their feedback on the evidence for each indicator, integrating new evidence, suggesting other websites to search, and adding recommendations. They added evidence regarding Veneto's experience on indicator 2 of *food provision* domain, as well as integrated new evidence on the *leadership* domain. The Government officials, also, integrated new evidence on indicator 2 of *governance*, indicator 2 of *monitoring and intelligence* and indicator 2 of *funding and resources* domains.

### **Experts' rating and prioritization**

The next step in this project is the rating process from an expert panel at a national level, which will be formed by a wide range of public health experts, including academics, researchers, practitioners, and representatives

of non-governmental organisations. A formal invitation will be sent to identified experts who will be asked to rate the implementation of policies by the Italian Government for each of the 50 indicators of the Food-EPI tool, compared to international best practices (benchmarks).

The rating process was pilot tested to assess its comprehensibility and to identify and address any lack of clarity before carrying out a wider administration. The pilot testing included three experts identified through convenience sampling. They were sent a paper version of the evidence compilation document, reporting the degree of implementation of all good practice indicators. The rating was carried out in a Likert scale from 1 to 5, where: 1 was given when the specific policies were <20% implemented, 2 when were 20-40% implemented, 3 when were 40-60% implemented, 4 when were 60-80% implemented and finally 5 when were 80-100% implemented. International best practices (benchmarks), for each of the good practice indicators, were retrieved from INFORMAS and Food-EPI network and obtained from international food policy experts. These benchmarks include best examples from countries such as New Zealand, Chile, Australia, Argentina, Mexico, etc.

Once the rating process is finished and the data from the rating is collected, a prioritization action will follow, to evaluate the implementation gaps as identified from the ratings and to propose and prioritise concrete actions for implementation by the Italian Government. The domains with a lower implementation level and scores, as evaluated by the experts, are those needing prioritized policy actions to improve the situation, taking into account the impact, effects on equity, feasibility, acceptability, affordability and efficiency of the action.

## **RESULTS**

### **Evidence identification and synthesis**

The evidence for Government policy implementation and infrastructure concerning Italy varied among domains and indicators. We found the highest level of evidence within the following domains: *food composition* (2/2 indicators), *food labelling* (3/4 indicators), *food promotion* (4/5 indicators) and *food provision* (4/5). The domains with less identified evidence were *food prices* (1/4 indicators), *food in retail* (0/4 indicators), *food trade and investment* (0/2 indicators) and *platforms and interaction* (1/4 indicators) (see *Supplementary Material available online*).

### **Food composition**

COMP1: the Italian Ministry of Health, in collaboration with food industries, has issued a national document, committing to containing sugars, saturated fats, salt trans fatty acids [17]. Moreover, Italy has ratified European regulation 1924/2006 on nutrition and health, which states that the definition of nutrient profiles should take into account the content of different nutrients and substances with a nutritional or physiological effect, in particular those such as fats, saturated fats, trans fatty acids, sugars, sodium or salt, whose excessive intake in the general diet is not recommended [18].

COMP2: Italy has also ratified the EU Regulation 1169/2011, establishing standards of “administered” products, in addition to those “sold” – i.e., restaurants, canteens and catering, at least as far as allergens are concerned [19].

### **Food labelling**

LABEL1: the Italian legislation refers to the European one (EU Reg. 1169/2011), which implements the CODEX recommendations, stating the provision of food information to consumers and, also, promoting national provisions in labeling, presentation, and advertising of food [20, 21].

LABEL2: Italy has ratified the European regulation 1924/2006 on nutrition and health claims made on foods, which takes into account the content of different nutrients and substances focusing on fats, saturated fats, trans fatty acids, sugars, sodium or salt, poly- and monounsaturated fats, carbohydrates other than sugars, vitamins, minerals, proteins and fibers [18].

LABEL3: the Ministry of Health has issued a national document on food labelling, which provides food information to consumers and sets out the accepted levels of nutrients for a healthy diet. The logo of the food labels shows the amount of energy (expressed in Joules and calories), fats, saturated fats, sugars and salt (expressed in grams) present in a single portion of a given food. Furthermore, to communicate to the consumers how healthy or caloric the food they are about to buy is comes to the rescue the symbol of the battery, which indicates the percentage of each element present, in relation to the recommended daily amount of intake [19].

LABEL4: no evidence was identified on labelling the menu boards of all quick service restaurants (i.e. fast-food chains) applied by the Government.

### **Food promotion**

PROMO1: the code of self-regulation for TV, which relies on a national law by the Italian Government, introduces a differentiated protection system for time slots. For example, it states that during the period from 16.00 to 19.00 must be avoided advertising in favour of soft drinks and alcoholic beverages within programmes that are aimed at minors [21].

PROMO1 and 2: the EU Pledge is a voluntary initiative by leading food and beverage companies to change food and beverage advertising to children under the age of twelve in the European Union. It aims at not advertising food and drinks to children under the age of 12 on TV, the press and the Internet, except for those products that meet precise nutritional criteria based on accredited scientific assessments (<https://eu-pledge.eu/>).

PROMO3: the document published by the Ministry of Health, entitled “Shared objectives for the improvement of the nutritional characteristics of food products with particular attention to the child population”, introduces, at a national level, specific limitations to the forms of promotion and advertising for soft drinks, including abstention of marketing in channels directed to children under 12 years of age and abstention of direct business activities in primary schools [17].

PROMO4: the Ministry of Health has issued na-

tional guidelines for school catering, whose objectives include facilitating correct eating habits through an effective model of health promotion and prevention [22].

PROMO5: no evidence was found on policies implemented by the Government to ensure that unhealthy foods are not commercially promoted to children, including adolescents on food packages.

### **Food prices**

PRICES1: no evidence was identified regarding the minimisation of taxes or levies on healthy foods to encourage healthy food choices (e.g., low or no sales tax, excise, value-added or import duties on fruit and vegetables).

PRICES2: many attempts to tax unhealthy foods (sugar tax) have been made, but nothing has been finalised until now. Italy is cited in many articles as a case study on proposed but not introduced food taxes [23].

PRICES3: no evidence was identified on existing subsidies on foods, including infrastructure funding support (e.g., research and development, supporting markets or transport systems), to favour healthy rather than unhealthy foods.

PRICES4: there are some food related support programmes in Italy, however, it should be highlighted that the distributed food concerns the primary goods, without a specific focus on healthy or unhealthy food. Furthermore, these are not initiatives coming directly from the Government, but rather from non-profit organizations or EU ([www.emporiosolidarieta.it/](http://www.emporiosolidarieta.it/)).

### **Food provision**

PROMO1: the Ministry of Health has issued National guidelines for school catering (GU n. 134/2010), which aim to facilitate, from infancy, the adoption of correct eating habits for health promotion and the prevention of chronic degenerative diseases. It reports the recommended daily intake levels of energy and nutrients (LARN) (including salt, sugar, fat, fibre) diversified by sex, age and levels of physical activity [22].

“Fruits and vegetables in schools” is a Program promoted by Ministry of Agricultural, Food and Forestry Policies with the collaboration of CREA (Council for agricultural research and analysis of the agricultural economy) and ISMEA (Service institution for the agricultural food market), intended for schools, aiming to encourage children to consume fruit and vegetables and support them in conquering healthy eating habits, spreading educational messages about food waste generation and their prevention [24].

The Ministry of Agricultural, Food and Forestry Policies has also launched the initiative “Mense scolastiche biologiche”, in order to have more biological food in schools, reduce food waste and use local products [25].

Furthermore, a number of regional initiatives have been identified. Lombardy Region has issued guidelines for school catering, which include food and nutrient recommendations to compose a balanced menu by choosing adequate quantities of foods belonging to the different food groups. The recommendations include the adequate quantity of salt, fibre, sugar, fat, and drinks [26].

Veneto Region, as well, has published guidelines for school catering, which give recommendations on quality of food in the canteens and vending machines [27].

PROV2: as for the other public sectors, the Ministry of Health has issued national guidelines for hospital catering, aimed at improving nutritional quality and food safety in hospitalized subjects. The recommended daily intake levels of energy and nutrients (LARN) are diversified by the disease the patients are hospitalised for [28].

National guidelines exist also for pediatric hospital catering with the aim of guaranteeing the necessary nutrient reserve. The recommended daily intake levels of energy and nutrients (LARN), protein and lipid requirements, vitamin and mineral requirements are given for different age groups and sex [29].

Moreover, regional initiatives have been identified. Piemonte Region has issued an operating proposal for catering in nursing homes for the elderly, aiming to provide a dietetic guideline consisting of a minimum guaranteed number of different types of meals based on protein-energy content and/or consistency in relation to the clinical needs of the patients. It shows the adequate intake of proteins, fibres, carbohydrates, fat and vitamins [30].

Lastly, Lazio Region has published guidance on nutritional quality of meals provided in collective catering. It is composed of two parts: (1) Procedures and forms for the approval of the dietary tables and (2) Control and monitoring of meals' nutritional adequacy in collective catering [31].

PROV3: as for policies and guidance on food service activities, Emporia of Solidarity have emerged in recent years as a new form of regional food assistance provision programs in Italy, including a broad range of actors such as Caritas, Municipalities, Fondazione Banco Alimentare Onlus – FBAO and others. They do not focus solely on food provision, but offer, also, collateral services; e.g., guidance on balanced nutrition and education on how to manage expenditures ([www.emporiosolidarieta.it/](http://www.emporiosolidarieta.it/)).

PROV4: no evidence was found on support and training systems implemented by the Government to help schools and other public sector organisations and their caterers meet the healthy food service policies and guidelines.

PROV5: finally, with regard to supporting private companies to provide and promote healthy foods and meals in their workplaces, the "Support for the implementation in Italian regional realities of the Health Promotion Network in the Workplace" program acts on the health promotion in the workplace, focusing on the prevention of behavioral risk factors of chronic and degenerative diseases (incorrect nutrition, sedentary lifestyle, smoking, harmful alcohol consumption) [32].

### Food retail

No evidence was found for neither of the four indicators of the *food retail* domain (RETAIL 1-4), concerning the power of the Government to implement policies and programs to support the availability of healthy foods and limit the availability of unhealthy foods in

communities (outlet density and locations) and in-store (product placement).

### Food trade and investment

No evidence was retrieved for neither of the two indicators of the *food trade and investment* domain (TRADE 1-2), concerning policies implemented by the Government that ensure that trade and investment agreements protect food sovereignty, favour healthy food environments, are linked with domestic health and agricultural policies in ways that are consistent with health objectives, and do not promote unhealthy food environments.

### Leadership

LEAD1: several developed and implemented programs, including "Shared objectives for improving the nutritional characteristics of food products with particular attention to the infant population (3-12 years)" [16] and Regulation (EC) No 1924/2006 on rules on nutrition and health [18], show the political support expressed at both national as well as international level for improving food environments, population nutrition, diet related NCDs and their related inequalities.

LEAD2: clear population intake targets have been established by the Government for the nutrients of concern and/or relevant food groups in documents such as "The 4<sup>th</sup> Review of Nutrient Reference Energy Levels for the Italian Population", published by the SINU [33]. Moreover, Italy shares the overview on dietary reference values for the EU population as derived by the EFSA (European Food Safety Authority) Panel on Dietetic Products, Nutrition and Allergies (NDA). This document gives the dietary reference values, which indicate the amount of an individual nutrient that people need for good health depending on their age and gender [34].

LEAD3: to establish clear, interpretive, evidenced-informed food based dietary guidelines the National Research Institute for Food and Nutrition has published "Guidelines for a healthy eating". It gives recommendations on dietary requirements in order to create a healthy and balanced diet, guaranteeing more wellness and health [35].

LEAD4: the evidence regarding a comprehensive, transparent, up-to-date implementation plan linked to national needs and priorities, to improve food environments, reduce the intake of the nutrients of concern diet-related NCDs include:

1) evaluation of national critical issues in the nutritional field and intervention strategies 2016-2019, which is an agreement between the Government, the Regions and the autonomous Provinces of Trento and Bolzano [35]. It provides proposals for the planning of public intervention in the nutrition sector, above all in order to combat chronic diseases and their impact on the Italian population [36];

2) technical table on nutritional safety (Tavolo Tecnico sulla sicurezza nutrizionale, TaSiN), which is responsible for coordinating the initiatives related to nutritional surveillance and orientation, as the point of confluence of a national network to be implemented [37];

3) National prevention plan 2014-2018, which in-

tends to outline a system of health promotion and prevention actions that will accompany the citizen in all phases of life and in the workplaces [38].

LEAD5: finally, as for protecting vulnerable populations the program “Identification of surveillance systems and registers of mortality, tumors and other pathologies” [39], aims to ensure an active system of systematic collection of personal, health and epidemiological data to record and characterize all cases of risk to health, of a particular disease or of a relevant health condition, stratified for different population group, including the vulnerable ones. Moreover, the TaSiN, which is responsible for coordinating the initiatives related to nutritional surveillance and orientation, aims epidemiological surveillance and prevention, also, for vulnerable groups [37].

### Governance

GOVER1: several initiatives have been implemented by the Ministry of Health and shared by food industries in Italy with regard to commercial restriction of unhealthy foods, such as:

- guidelines for commercial communication regarding food products and beverages, to protect children and their correct nutrition, which includes a national policy addressing commercial labelling of food and drinks and outlines the limits within which commercial communication must be maintained in this sector [40];
- the code of voluntary initiatives of the confectionery industry for the promotion of healthy eating behaviors, adopted by the Association of Italian confectionery industries [40];
- the self-regulation code for the promotion and marketing of the non-alcoholic beverage industry adopted by the Italian Association of Non-Alcoholic Beverages (ASSOBIBE) [40];
- the CONFIDA code for the operators of automatic food and beverage distribution which, among other things, provides guidelines related to nutritional parameters [40].

GOVER2: the document entitled “Health promotion in the third millennium: Facebook, social gaming and promotion of healthy lifestyles among adolescents” was drawn up for the purpose of constituting an operational tool for the realization of research and in-depth activities in the nutritional field relating to developmental age and in particular adolescence, in order to use evidence in the development of food and nutrition policies. It was structured and published by AGENAS, and SINU [41].

GOVER3: no evidence was identified on the implementation of policies and procedures for ensuring transparency in the development of food and nutrition policies.

GOVER4: INRAN (Istituto Nazionale di Ricerca per gli Alimenti e la Nutrizione, National Research Institute for Food and Nutrition), now incorporated in the CREA, in collaboration with the Ministry of Agriculture and Forestry Policies has issued a guideline for a healthy Italian diet, which aims to provide to consumers information and suggestion to eat better, both respecting cooking traditions and protecting the populations’ health [35].

### Monitoring and intelligence

MONIT1: no evidence was identified on monitoring that systems implemented by the Government, are in place to regularly monitor food environments (especially for food composition for nutrients of concern, food promotion to children, and nutritional quality of food in schools and other public sector settings), against codes/guidelines/standards/targets.

MONIT2: the Health Behaviour in School-aged Children (HBSC) study is a multicentric study promoted by WHO Europe, including 50 countries and regions across Europe and North America, among which Italy. It aims at investigating adolescents’ (11-15 years) health and well-being in order to address health promotion policies. Among the investigation areas there is, also, nutrition (consumption of fruits, vegetables, sweets and sugared drinks) [42].

MONIT3: the surveillance system “OKKIO alla Salute” is aimed at monitoring overweight and obesity in children (6-10 y) and analysing related risk factors. It was first launched in 2007 promoted and funded by the Ministry of Health/ CCM, and is coordinated by ISS in collaboration with the Regions, the Ministry of Health and the Ministry of Education ([www.epicentro.iss.it/okkioallasalute](http://www.epicentro.iss.it/okkioallasalute)).

Passi and Passi d’Argento are, also, 2 surveillance systems for adults (18-65 ys, > 65ys), which aim at investigating lifestyles and behavioural risk factors linked to NCDs and the degree of knowledge and adherence to the intervention programs that the country is carrying out for their prevention. It is promoted and conducted by CCM, ISS and Local Health Authorities ([www.epicentro.iss.it/passi/dati/temi](http://www.epicentro.iss.it/passi/dati/temi)).

MONIT4: the National Statistics Institute (Istituto Nazionale di Statistica, ISTAT) provides data in order to have a map on NCDs prevalence, their risk factors and occurrence rates. The main goal is to inform policy makers/Institutions ([www.istat.it/](http://www.istat.it/)).

MONIT5: no evidence was found that reported if major programs and policies are regularly evaluated to assess their effectiveness and contributions to achieving the goals of the nutrition and health plans.

MONIT6: regarding the progress towards reducing health inequalities there have been a number of initiatives including: 1) “Italy for health equity”. Starting from the best scientific evidence currently available on health determinants and outcomes, and from an analysis of the experiences and good practices implemented for the benefit of the most vulnerable groups at national and local level, this document presents possible shared intervention strategies to propose to policy makers and stakeholders involved in combating health inequalities [43].

2) the National Institute for the Promotion of the Health of Migrant Populations and for the Fight of Poverty Diseases (INMP) is an institution of the National Health Service (Sistema Sanitario Nazionale, SSN, supervised by the Ministry of Health, which was established in 2007 to address the socio-health challenges posed to the most vulnerable populations. The Institute welcomes and cares for all persons, Italians and migrants, who are in a condition of serious eco-

nomic and social hardship and encounter greater difficulties in accessing care [44]. No evidence on monitoring systems, implemented by the Government, are in place to regularly monitor food environments (especially for food composition for nutrients of concern, food promotion to children, and nutritional quality of food in schools and other public sector settings), against codes/guidelines/standards/targets.

### Funding and resources

FUND1: the National Prevention Plan – which aims to reduce the preventable and avoidable burden of morbidity, mortality and disability of non-communicable diseases, prevent the consequences of neurosensory disorders, promote mental well-being in children, adolescents and young people, prevent addictions to substances and behaviors, reduce the frequency of infections/priority infectious diseases, implement the Integrated National Control Plan for food safety prevention and veterinary public health – has an allocated budget of 200 million euros. However, there is no evidence on what proportion of this budget is specifically dedicated to the nutrition [45]. Over the years, several campaigns have taken place in Italy regarding population nutrition promotion, such as:

- **Guadagnare Salute** ([www.epicentro.iss.it/guadagnare-salute/programma/](http://www.epicentro.iss.it/guadagnare-salute/programma/)), aiming at promoting healthy lifestyles and acting in particular on the main risk factors of chronic degenerative diseases of great epidemiological relevance;
- **Capitan Kuk** ([www.salute.gov.it/portale/news/p3\\_2\\_3\\_1\\_1.jsp?menu=dossier&id=3](http://www.salute.gov.it/portale/news/p3_2_3_1_1.jsp?menu=dossier&id=3));
- **Canguro Saltalacorda** ([www.salute.gov.it/portale/temi/p2\\_6.jsp?id=1715&area=stiliVita&menu=progetti](http://www.salute.gov.it/portale/temi/p2_6.jsp?id=1715&area=stiliVita&menu=progetti));
- **Forchetta e scarpetta** ([www.salute.gov.it/portale/temi/p2\\_6.jsp?id=1714&area=stiliVita&menu=progetti](http://www.salute.gov.it/portale/temi/p2_6.jsp?id=1714&area=stiliVita&menu=progetti)), which are all campaigns that have as target the nutrition of children;
- **Progetto Cuore** ([www.epicentro.iss.it/alimentazione/progetto-cuore-riduzione-consumo-di-sale-2020](http://www.epicentro.iss.it/alimentazione/progetto-cuore-riduzione-consumo-di-sale-2020)), promoting reduction of salt and iodine to reduce cardio-vascular diseases.

However, documents that indicate the exact amount of spending on nutrition for each one of these projects are apparently absent [46].

FUND2: OKkio alla ristorazione [45] is an inter-regional network project for surveillance, monitoring and health promotion in collective catering. It aims to develop an effective collaboration between Food Hygiene and Nutrition Services (SIAN) and Collective Catering in Italy. Its objectives are monitoring user food consumption, promoting menus and healthy food, promoting national nutritional campaigns aimed at consumers.

FUND3: there is not an official national agency for health promotion in Italy. There's a Directorate-General office at Ministry of Health (Office No. 8), which is responsible for health promotion and prevention and control of chronic degenerative diseases. However, this office does not have a dedicated, secure funding stream [47].

### Platforms and interaction

PLAT1: no evidence was identified regarding robust coordination mechanisms across departments and levels of Government (national, state and local) to ensure policy coherence, alignment, and integration of food, obesity and diet-related NCD prevention policies across Governments.

PLAT2: no evidence was identified on formal platforms (with clearly defined mandates, roles and structures) for regular interactions between Government and the commercial food sector on the implementation of healthy food policies and other related strategies

PLAT3: the only evidence found regarding this domain was The Healthy Cities Network, which is an initiative promoted by the World Health Organization (WHO) to help cities spread public health awareness, develop local policies for health and health programs, prevent and overcome threats and health risks and anticipate future health challenges ([www.retecittasane.it/](http://www.retecittasane.it/)). On May 16, 2018 the Italian Ministry of Health and the Italian Healthy Cities Network signed a Memorandum of Understanding renewing, for another three years, the collaboration with The Healthy Cities Network. PLAT4: no evidence was found on Governments' work with a system-based approach with (local and national) organisations/partners/groups to improve the healthiness of food environments at a national level.

### Health in all policies

HIAP1: Italy has approved the Understanding on the National Prevention Plan 2014-2018, for which 200 million euros were allocated, that dedicates special focus to health policies [38].

The essential levels of assistance (Livelli essenziali di assistenza, LEA) are the services that the SSN is required to provide to all citizens, free of charge or against the payment of a ticket. This document, last updated in 2017, represents the result of a shared work between Italian Government, Regions, autonomous Provinces and scientific societies and counts for 800 million euros.

HIAP2: no evidence was identified on processes such as health impact assessment's (HIAs) to assess and consider health impacts during the development of other non-food policies.

### Results of the pilot rating

All three experts contacted to participate in the pilot rating accepted and rated the evidence provided to them. They were from non-academic and academic fields and had several years of experience. The mean of the experts' rating for each indicator is reported in *Table 1*. The areas that were rated by experts as the ones with more than 80% of policy implementation were *food provision* (indicator 1 and 2) and *food monitoring and intelligence* (indicator 3). the areas that were rated by experts as the ones with moderate level of policy implementation were *food label* (indicator 1), *food promotion* (indicator 4), *food prices* (indicator 4), *leadership* (indicator 3, 4, 5) and *food monitoring and intelligence* (indicator 2). The domains with the lowest rating were those concerning *platforms and interactions*, *health in all policies*, *food retail*, *food trade*, *food prices* (indicator 2), *governance*

**Table 1**  
The mean rating for each indicator based on the pilot testing from three experts

Indicator	Mean
COMP1: Food composition targets/standards/restrictions have been established by the government for the content of the nutrients of concern (trans fats, added sugars, salt, saturated fat) in industrially processed foods, in particular for those food groups that are major contributors to population intakes of those nutrients of concern	3.67
COMP2: Food composition targets/standards/restrictions have been established by the government for the content of the nutrients of concern (trans fats, added sugars, salt, saturated fat) in meals sold from food service outlets, in particular for those food groups that are major contributors to population intakes of those nutrients of concern	1.67
LABEL1: Ingredient lists and nutrient declarations in line with Codex recommendations are present on the labels of all packaged foods	4
LABEL2: Evidence-based regulations are in place for approving and/or reviewing claims on foods, so that consumers are protected against unsubstantiated and misleading nutrition and health claims	3.67
LABEL3: One or more interpretive, evidence-informed front-of-pack supplementary nutrition information system(s) endorsed by the Government, which readily allow consumers to assess a product's healthiness, is/are applied to all packaged foods (examples are the Nutriscore and traffic lights)	3
LABEL4: A simple and clearly-visible system of labelling the menu boards of all quick service restaurants (i.e., fast food chains) is applied by the government, which allows consumers to interpret the nutrient quality and energy content of foods and meals on sale	3.5
PROMO1: Effective policies are implemented by the government to restrict exposure and power of promotion of unhealthy foods to children including adolescents through broadcast media (TV, radio)	2.33
PROMO2: Effective policies are implemented by the government to restrict exposure and power of promotion of unhealthy foods to children including adolescents through online and social media	3.67
PROMO3: Effective policies are implemented by the government to restrict exposure and power of promotion of unhealthy foods to children including adolescents through non-broadcast media other than packaging and online/social media	2.33
PROMO4: Effective policies are implemented by the government to ensure that unhealthy foods are not commercially promoted to children including adolescents in settings where children gather (e.g., preschools, schools, sport and cultural events)	4
PROMO5: Effective policies are implemented by the government to ensure that unhealthy foods are not commercially promoted to children, including adolescents on food packages	3
PRICES1: Taxes or levies on healthy foods are minimised to encourage healthy food choices (e.g., low or no sales tax, excise, value-added or import duties on fruit and vegetables)	2.33
PRICES2: Taxes or levies on unhealthy foods (e.g., sugar-sweetened beverages, foods high in nutrients of concern) are in place and increase the retail prices of these foods by at least 10% to discourage unhealthy food choices, and these taxes are reinvested to improve population health	1
PRICES3: The intent of existing subsidies on foods, including infrastructure funding support (e.g., research and development, supporting markets or transport systems), is to favour healthy rather than unhealthy foods	2.33
PRICES4: The Government ensures that food-related income support programs are for healthy foods	4
PROV1: The Government ensures that there are clear, consistent policies (including nutrition standards) implemented in schools and early childhood education services for food service activities (canteens, food at events, fundraising, promotions, vending machines etc.) to provide and promote healthy food choices	4.33
PROV2: The Government ensures that there are clear, consistent policies in other public sector settings for food service activities (canteens, food at events, fundraising, promotions, vending machines, etc.) to provide and promote healthy food choices	4.33
PROV3: The Government ensures that there are clear, consistent public procurement standards in public sector settings for food service activities to provide and promote healthy food choices	3
PROV4: The Government ensures that there are good support and training systems to help schools and other public sector organisations and their caterers meet the healthy food service policies and guidelines	3
PROV5: The Government actively encourages and supports private companies to provide and promote healthy foods and meals in their workplaces	3
RETAIL1: Zoning laws and policies are implemented to place limits on the density or placement of quick serve restaurants or other outlets selling mainly unhealthy foods in communities and/or access to these outlets (e.g., opening hours)	1.5
RETAIL2: Zoning laws and policies are implemented to encourage the availability of outlets selling fresh fruit and vegetables and/or access to these outlets (e.g., opening hours, frequency i.e., for markets)	1
RETAIL3: The Government ensures existing support systems are in place to encourage food stores to promote the in-store availability of healthy foods and to limit the in-store availability of unhealthy foods	1
RETAIL4: The Government ensures existing support systems are in place to encourage the promotion and availability of healthy foods in food service outlets and to discourage the promotion and availability of unhealthy foods in food service outlets	1

*Continues*

**Table 1**  
Continued

Indicator	Mean
TRADE1: The Government undertakes risk impact assessments before and during the negotiation of trade and investment agreements, to identify, evaluate and minimize the direct and indirect negative impacts of such agreements on population nutrition and health	1
TRADE2: The Government adopts measures to manage investment and protect their regulatory capacity with respect to public health nutrition	1
LEAD1: There is strong, visible, political support (at the head of government or state/ ministerial level) expressed at both national as well as international level for improving food environments, population nutrition, diet related NCDs and their related inequalities"	1.5
LEAD2: Clear population intake targets have been established by the government for the nutrients of concern and / or relevant food groups to meet WHO and national recommended dietary intake levels	2.5
LEAD3: Clear, interpretive, evidenced-informed food based dietary guidelines have been established and implemented	4
LEAD4: There is a comprehensive, transparent, up-to-date implementation plan linked to national needs and priorities, to improve food environments, reduce the intake of the nutrients of concern to meet WHO and national recommended dietary intake levels, and reduce diet-related NCDs	4
LEAD5: Government priorities have been established to reduce inequalities or protect vulnerable populations in relation to diet, nutrition, obesity and NCDs	4
GOVER1: There are procedures in place to restrict commercial influences on the development of policies related to food environments where they have conflicts of interest with improving population nutrition. for example: restricting lobbying influences	1.5
GOVER2: Policies and procedures are implemented for using evidence in the development of food and nutrition policies	1
GOVER3: Policies and procedures are implemented for ensuring transparency in the development of food and nutrition policies	2.5
GOVER4: The Government ensures public access to comprehensive nutrition information and key documents (e.g., budget documents, annual performance reviews and health indicators) for the public	2
MONIT1: Monitoring systems, implemented by the Government, are in place to regularly monitor food environments (especially for food composition for nutrients of concern, food promotion to children, and nutritional quality of food in schools and other public sector settings), against codes / guidelines / standards / targets	1
MONIT2: There is regular monitoring of adult and childhood nutrition status and population intakes against specified intake targets or recommended daily intake levels	4
MONIT3: There is regular monitoring of adult and childhood overweight and obesity prevalence using anthropometric measurements	4.5
MONIT4: There is regular monitoring of the prevalence of NCD metabolic risk factors and occurrence rates (e.g., prevalence, incidence, mortality) for the main diet-related NCDs	5
MONIT5: Major programs and policies are regularly evaluated to assess their effectiveness and contributions to achieving the goals of the nutrition and health plans	3.5
MONIT6: Progress towards reducing health inequalities or health impacts in vulnerable populations and social and economic determinants of health are regularly monitored	3.5
FUND1: The "population nutrition" budget, as a proportion of total health spending and/or in relation to the diet-related NCD burden sufficiently contributes to reducing diet-related NCD's	1
FUND2: Government funded research is targeted for improving food environments, reducing obesity, NCDs and their related inequalities	2
FUND3: There is a statutory health promotion agency in place that includes an objective to improve population nutrition with a secure funding stream	1.5
PLAT1: There are robust coordination mechanisms across departments and levels of government (national, state and local) to ensure policy coherence, alignment, and integration of food, obesity and diet-related NCD prevention policies across governments	1
PLAT2: There are formal platforms (with clearly defined mandates, roles and structures) for regular interactions between Government and the commercial food sector on the implementation of healthy food policies and other related strategies	1
PLAT3: There are formal platforms (with clearly defined mandates, roles and structures) for regular interactions between government and civil society on the development, implementation and evaluation of healthy food policies and other related strategies	1
PLAT4: The Governments work with a system-based approach with (local and national) organisations/partners/groups to improve the healthiness of food environments at a national level	1
HIAP1: There are processes in place to ensure that population nutrition, health outcomes and reducing health inequalities or health impacts in vulnerable populations are considered and prioritised in the development of all government policies relating to food	1
HIAP2: There are processes e.g., Health Impact Assessment's (HIAs) to assess and consider health impacts during the development of other non-food policies	1

(indicator 2), *food monitoring and intelligence* (indicator 1). The feedback from experts was positive, reporting a high comprehensibility, clear language used and an easy, user-friendly rating process.

## DISCUSSION

Despite growing interest worldwide for preventive action to be taken to tackle the obesity epidemic among all populations groups, there is the need for more evidence of the relative contribution of different recommended policies to improving population nutrition.

The present study utilized the Food-EPI tool, created by INFORMAS project [8] to collect evidence on good practice policies and infrastructures implemented by the Italian Government to improve population nutrition by improving food environments [16]. Government action indeed has been reported to be essential to implement policies to create healthier food environments.

In terms of policies implemented, the indicators for which a higher level of evidence was identified were: *food composition* (2/2 indicators), *food labelling* (3/4 indicators) and *food promotion* (4/5 indicators) and *food provision* (4/5 indicators). The research found a gap of evidence with regard to food in retail (0/4) and *food trade* and *investment* (0/2) indicators.

In terms of *infrastructure*, less evidence of implementation was identified compared to policies. The indicators with the highest level of evidence were *leadership* (5/5) and *funding* and *resources* (3/3), while the indicators with less evidence identified were *platforms* and *interaction* (1/4), *health in all policies* (1/2) and *governance* (2/4).

However, it should be highlighted that the evidence identified for each indicator was very heterogeneous in terms of quality of evidence, amount, and level, so a quantitative analysis among indicators would not be possible.

In order to test the rating process before a wider administration, a pilot test, including three experts, was conducted. The aim of this pilot testing was not to have results on the policy implementation level regarding healthy food environments in Italy, but rather to test the instrument and to receive feedback on the rating process and evidence compilation document, for a better wider administration. The pilot study showed a high comprehensibility and suitability of the rating process, which means that a *wider* administration can be carried out, using the evidence document that has been prepared by the research team. The areas with less evidence, where Government actions are needed the most according to the results of the pilot test were those concerning *platforms and interaction*, *health in all policies*, *food retail*, *food trade*, *food prices* (indicator 2), *governance* (indicators 2) and *monitoring and intelligence* (indicator 1). In line with the Food-EPI EU study, which reports an assessment of EU-level policies influencing food environments and priority actions to create healthy food environments in the EU, none of the EU-level policies with respect to the Food-EPI policy domains were rated as (very) strong. This study also reports policy implementation in the *food promotion*, *food prices*, *food in retail* domains as very weak or as non-existent [16].

However, the results of this pilot testing, being just preliminary, do not allow to drive final conclusions. Furthermore, since this work focuses more on the structuring and complication of the evidence document and reports only the results of a pilot rating process, it is not possible to compare the level of policy implementation in Italy with other countries. In this context, there is the need for the final results of the rating process, the wider administration of which will give more substantial and reliable information on the policies implemented in Italy and the prioritization of them by the Italian Government. Based on the results of this final rating, the experts will formulate recommendations for the Government on domains and indicators where further work and evidence is needed. The Expert Panel will give concrete actions for Italian Government, which will be prioritised by importance (need, impact, equity, other positive and negative effects) and achievability (feasibility, acceptability, affordability and efficiency) for both domains, i.e., policy and infrastructure support, separately.

Bringing together experts to systematically assess food environment policy has the potential to identify areas with broad expert recognition as important contributors to shaping a healthier food environment [7].

The Food-EPI provides a useful set of indicators focusing on where Government actions are needed most, and the process involves a wide range of stakeholders. The Food-EPI is currently being implemented by several countries globally.

The results and conclusions from different countries will be useful for the Decade of Action on Nutrition (<https://www.un.org/nutrition/>), which stimulates Governments to make relevant commitments on nutrition. The Decade of Action on Nutrition is a commitment by United Nations Member States to undertake 10 years of sustained and coherent implementation of policies, programmes and increased investments to eliminate malnutrition in all its forms, everywhere, leaving no one behind [48]. It is anticipated that benchmarking the extent of implementation of Government policies will increase accountability of Governments for their actions on food environments [49].

Moreover, Food-EPI has the potential to also enhance civil society's capacity to advocate for healthy food environments. This study contributes to the efforts of INFORMAS to broadly characterize the global food environment [8].

## CONCLUSIONS

This study has provided a first step in identifying and summarizing Government action to improved food environments in Italy. Regular monitoring using Food-EPI plays a key role in creating awareness to address gaps in food environment policy in Italy to decrease the burden of diet-related NCDs.

### Conflict of interest statement

Authors declare no conflict of interest.

Received on 18 October 2021.

Accepted on 24 January 2022.

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