LANDSCAPE ASSESSMENT ON GLOBAL MONITORING OF DIET QUALITY

Conducted on behalf of the Diet Quality Working Group of the WHO/UNICEF Technical Expert Advisory group on nutrition Monitoring (TEAM)
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This research report is an outcome of the WHO-UNICEF Technical Expert Advisory group on nutrition Monitoring (TEAM) and was supported by the Bill & Melinda Gates Foundation.

This document was prepared by the Diet Quality Working Group of the WHO-UNICEF Technical Expert Advisory Group on Nutrition Monitoring (TEAM), under the joint coordination of the Growth Assessment and Surveillance Unit, Department of Nutrition for Health and Development, World Health Organization (WHO) and Data & Analytics Section, Division of Data, Analytics, Planning and Monitoring, UNICEF.

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Summary

Globally, dietary-related risk factors are the leading cause of poor health and mortality, and it has become increasingly important to understand diet quality and to monitor it globally. Recognizing this need for better food and nutrition monitoring at the global level, the diet quality working group within WHO-UNICEF Technical Expert Advisory group on nutrition Monitoring (TEAM) undertook a landscaping exercise with 15 experts in the field of nutrition, agriculture, and environment to: (i) understand how they define diet quality; (ii) learn about current initiatives to measure diet quality concepts; and (iii) identify improvements needed in the global monitoring of diet quality to which TEAM could contribute.

Different definitions of diet quality have recently emerged from research projects and institutions, but respondents believed that consensus on the definition of “diet quality” or “healthy diets” was lacking. They believed it was the role of normative global agencies to develop a definition that member states could accept and recognize. Having an accepted definition with clear concepts of diet quality could then facilitate the operationalization of diet quality monitoring. Respondents also identified four key concepts that should be monitored globally: (i) consumption and intake to measure adequacy and moderation; (ii) food environment to understand the context and barriers that populations face in order to access healthy diets; (iii) dietary diversity; and (iv) sustainability.

Many respondents acknowledged that the task to monitor diet quality globally is difficult and may not be feasible to the extent desired for all concepts of diet quality. Nevertheless, there is an increasing need of a global diet quality monitoring system. Diets are a key component of nutrition and an immediate cause of both under- and over-nutrition, yet not much is known about dietary intake across the globe. For example, information is needed to better understand dietary changes over time and the trends in dietary intake between countries, within countries, between urban and rural settings, and across different age and gender population groups. Such information would be useful for countries and their governments, who are the primary users of global diet quality monitoring along with researchers, programme implementers, industries and sectors outside of nutrition. Countries would welcome such an initiative given that many countries have developed food-based dietary guidelines but lack ways to assess how their populations are eating, following the guidelines, and how this is changing over time.

To monitor diet quality globally, the global nutrition community will need to address several gaps, including clearly establishing the concepts of diet quality. Other gaps include identifying survey platforms that have the reach to capture such information globally, the ability to collect quality dietary data, and which indicators to use. Further, some age and gender groups lack relevant diet-related indicators. There is a need to evaluate existing survey platforms and improve them, where possible, as some of these platforms already have a wide reach in many countries and collect information that can inform policies and programmes aiming to improve diet quality.

There are several ongoing initiatives working on various aspects of diet quality and ways that TEAM could contribute to this field. Identified initiatives included the Global Dietary Database, the EAT-Lancet Commission on Food, Planet, Health, the International Network for Food and Obesity Research, Monitoring, and Action Support (INFORMAS), FAO/WHO Global Individual Food Consumption data Tool (FAO/WHO GIFT), and the Gallup Global Diet Quality Project. Respondents believed that TEAM can play important roles in diet quality monitoring: (i) convene those working on diet quality to harmonize actions and what is being done by different groups; (ii) set guidelines on what indicators to use to monitor diet quality; and (iii) advocate for diet quality monitoring to donors and countries.
1. Introduction

Dietary risk factors are the leading cause of poor health globally. According to the Global Burden of Disease, poor diet is the leading cause of mortality. Furthermore, the food system in which food is produced and consumed has detrimental environmental implications, and there is increased interest in understanding characteristics of sustainable healthy diets (http://www.fao.org/3/ca6640en/ca6640en.pdf). With shifting population diets, defining diet quality and how it should be assessed or monitored globally has become increasingly important. Recognizing this need for better food and nutrition monitoring at the global level, the diet quality working group within WHO-UNICEF Technical Expert Advisory group on nutrition Monitoring (TEAM) undertook a landscaping exercise to understand how TEAM could best contribute to work being done around diet quality. This landscaping exercise had three objectives: (i) to understand how experts define diet quality; (ii) to learn about current initiatives to measure diet quality concepts; and (iii) to identify improvements needed in the global monitoring of diet quality to which TEAM could contribute.

2. Data collection

We conducted semi-structured key informant interviews with 15 experts in the field of nutrition, agriculture, and environment from academia, non-governmental organizations, UN organizations, international research agencies, government agencies, and independent consultancies. Interviews covered four topics: defining diet quality, objectives for global monitoring of diet quality, gaps in diet quality monitoring, and potential role for TEAM. Three preliminary interviews were conducted in late 2018 and early 2019 and the remaining interviews were conducted in July and August of 2019. In total, the 15 key informant interviews lasted, on average, 40 minutes.

For analysis, we used emergent coding to identify themes under five broad categories: defining diet quality; objectives of monitoring; gaps; initiatives; and the role of TEAM. Open coding was used to break down the information into descriptive codes. Line-by-line coding was used, meaning that segments of texts could be marked with more than one code. Axial coding was then used to organize and display the data into conceptual themes.

3. Defining diet quality and concepts important to measure

3.1 Defining diet quality

Respondents believed that there is no fully agreed upon definition for the concepts of “healthy diets” or “diet quality” but that different definitions that share similarities have emerged from different research projects and institutions. Some respondents highlighted, however, that an acceptable definition for diet quality should come from normative global agencies and consist of the key recommendations that these institutions endorse. One respondent stated: “There is plenty of concepts out there, and there is plenty of even arguably some emerging harmony on them. But it has to come from normative agencies.” These respondents believed that a clear definition from one of the global normative agencies would facilitate global monitoring for diet quality because each recommendation could then be operationalized, and it would be a definition that member states would accept. Most respondents who described a definition used by their institution highlighted WHO’s Healthy Diet fact sheet. Respondents were, however, not content with WHO’s recommendations highlighting that their definition is “spotty”, appears “quite unofficial” and called for further improvements.

Respondents also provided further details on how they defined diet quality. These definitions included 8 emergent themes, or concepts. Some respondents (n=5) believed that the description of healthy diets should begin and focus on food intake and not on nutrients per se. One respondent stated: “our vision of the healthy diet starts with food. We believe that people do not eat nutrients. So, defining a healthy diet using nutrients is not the way to go. It has to do with food.”
The most frequently mentioned concept was adequacy (n=10). Respondents highlighted that a healthy diet is one that meets the recommended and required nutrients needed for a healthy life. While most respondents highlighted that adequacy is about providing sufficient nutrients, a few respondents also highlighted that food is a component to providing these nutrients and that adequacy consists of getting enough food to meet these requirements. Along these lines, some respondents also highlighted that dietary diversity is also a concept of diet quality as the consumption of different foods is associated with consumption of adequate nutrients.

Another concept that emerged is moderation (n=9). Respondents who mentioned this response believed that a quality diet should both promote health and prevent illness. Respondents highlighted that, while traditionally people discuss diet quality in terms of consuming healthy foods, it has become more important to recommend the moderate consumption of unhealthy foods or nutrients such as ultra-processed foods, sugar, sodium, and overall diets that lead to increased risk for diet-related chronic diseases.

Some respondents (n=5) also discussed proportionality as a concept for diet quality. Respondents who mentioned this response highlighted that diet quality consists of ensuring people consume the right proportions of foods and macronutrients.

Some respondents also evoked the concept of environmental sustainability (n=6) when thinking about diet quality. These respondents highlighted that considerations for sustainability and the impact food systems have on the environment are important concepts to defining diet quality. One respondent further highlighted that although there is a definition for sustainable diets, she perceived that many people did not find the definition to be useful.

An equal number of respondents (n=4) discussed both safety and overall diet patterns as concepts that make up diet quality. Respondents that mentioned safety as a concept of diet quality also acknowledged that it is a concept difficult to monitor globally. For example, one respondent described “within that standard definition [of diet quality] there's also safety, but in terms of operationalizing the concepts I would say that diversity, adequacy and moderation have been easier concepts for us to operationalize than the safety one.” The respondents who discussed diet patterns as a consideration for diet quality mentioned that diet quality is not just about what people should and should not eat or just about caloric intake, but instead it is about the diverse ranges of food consumption over time that are related to good health outcomes.

Other concepts that were mentioned for defining diet quality, but by few respondents, included factors that influence people’s willingness to purchase or eat foods (e.g., culture, pleasure of foods) (n=4), having age-specific definitions that take into consideration different nutritional needs throughout the life course (n=2), and water intake (n=1).

3.2 Concepts to measure

While respondents described various concepts for diet quality, respondents believed that some concepts are difficult or impossible to operationalize and measure. When asked which concepts of diet quality are important to monitor in global monitoring frameworks, responses fell into four themes, namely: consumption and intake to measure adequacy and moderation, food environment, dietary diversity, and sustainability. One respondent also mentioned that water intake was a concept that should be monitored globally.

a. Consumption and intake concepts

Overall, study respondents believed that at the minimum level, dietary intake needs to be monitored, and if possible, quantified to a certain extent. The most mentioned concept that would be important to monitor globally was moderation (n=10). Given the nutrition transition, the shift in populations diets that have occurred and continue to occur, and the increase in diet-related chronic diseases, respondents highlighted that it is important to measure and monitor indicators on foods that are related to decreased diet quality and should be consumed in moderation. One respondent stated: “there's also a lot of interest I think among the folks that I work with in monitoring global foods or things that are coming from outside of the local growing community, that includes a focus on energy dense nutrient foods. The work that I'm doing in India, these pre-packaged prepared foods are of a lot of interest because they're potentially related with decreasing dietary quality. They may also be impacting local growers and food markets. The discussion of the packaged foods and the energy dense foods of course is also very relevant in the U.S. where we also worry not so much about the globalization component but also about the possibility that, especially for kids,
for example, some of these foods may be cutting out the diversity of fruit and veg. So, then you’re replacing other healthier items in the diets. In sub Saharan Africa there’s some discussion of this because these foods are definitely there.” Respondents recommended monitoring the consumption of ultra-processed energy-dense foods that come from outside of local communities, sugar, sodium, and fats.

Respondents also highlighted that consumption of certain food groups should also be monitored globally given that the science has generally agreed on their importance for a healthy diet and are in nearly all food-based dietary guidelines. The food groups mentioned were fruits and vegetables, legumes, seeds, and nuts, and animal source foods.

Only a couple of respondents mentioned monitoring caloric intake and plant-based sources of protein.

b. Food environment

The concept of food environment in defining diet quality was not mentioned in respondents’ definition, but it was a concept that some respondents (n=5) believed should be monitored globally because of the context it provides in understanding people’s intake. Responses under this theme usually fell into three categories. The first category called for the monitoring of the food supply to better understand populations’ access to the nutritious foods that are recommended as part of a healthy diet in various settings. For example, one respondent stated: “I do think we need to be monitoring things like availability of foods to meet global guidance. For example, we have at least some quantitative guidance from WHO of long-standing about fruit and vegetable consumption… First of all, do food supplies in countries potentially meet needs for adequate fruit and vegetable intake?” Beyond just availability, respondents also believed that the cost and affordability of nutritious foods within countries, regions, or communities was a key concept to monitor globally, along with the choice environment to understand where consumers get or purchase the foods they consume.

c. Dietary diversity

Some respondents also mentioned minimum dietary diversity as an important concept to monitor globally. Respondents who mentioned this concept discussed that indicators for this concept for women of reproductive age and for infant and young children already exist and are monitored in many countries. Since the indicators already exist, some respondents believed it would be easier to monitor the concept of dietary diversity by including it in various data collection platforms. “I think the simplest, and the one that we can apply at population level with some meaningful interpretation is the one that looks at diversity, e.g. MDD or MDD-W – we can refine it make it as simple as possible, so countries can include in monitoring frameworks and national surveys, and in DHS,” stated one respondent.

Respondents also acknowledged that improvements could be made around these indicators and that the nutrition field should think about how to measure dietary diversity in other populations groups, but that it should nevertheless be part of a global diet quality monitoring framework.

d. Other

The concept of environmental sustainability (n=2) and water intake (n=1) were not likely to be mentioned as concepts to monitored globally. Two respondents also mentioned the importance of monitoring dietary patterns, though one of these respondents believed that the field of nutrition has not yet figured out how to do this: “I think ideally, it would be great if we could have diet-quality indicators and monitoring of the overall dietary pattern because as I said earlier, that’s what I think is really driving the health outcomes. That would be an ideal, and maybe we’ll get there.”
4. Objectives for monitoring

4.1 Why monitor diet quality globally?

All respondents believed that there was a need for monitoring diet quality globally because diets are a key component of nutrition and an immediate cause of both under- and over-nutrition. Overall, it was also important to respondents that we better understand the trends in dietary intake globally between countries, within countries, between urban and rural settings, and across different age and gender groups. Despite this acknowledgement for the need to monitor diet quality globally, many respondents also mentioned that the task is difficult and not always feasible to the extent desired for all concepts of diet quality.

Respondents explained that diets and dietary intake are in the pathway to nutritional status outcomes, as described in UNICEF’s nutrition framework, and should therefore be monitored in order to provide a better picture of nutrition. It was surprising, therefore, that this component of the nutrition framework is not well monitored globally, despite it being an immediate cause of nutritional status outcomes. These respondents also highlighted that dietary-related risk factors are the number one cause for morbidity and mortality according to the Global Burden of Disease group. Given its importance for health globally, diet and diet quality must be monitored to better understand the deficiencies occurring across different countries and regions and how to improve diets.

Respondents highlighted that it is also important to monitor diet quality in a comprehensive way. Responses within this theme included those from respondents who perceived that the nutrition field has traditionally used “measuring the problem” indicators such as wasting, stunting, and body mass index but not dietary risk factors. Other respondents believed that diet quality indicators should address the challenges of both undernutrition and overnutrition in order to prevent micronutrient deficiencies and non-communicable diseases. Therefore, while indicators such as minimum dietary diversity assess a dimension of diet quality, respondents remarked that this indicator is validated for micronutrient adequacy and not disease risk. With the shifting trends in diets and the challenge of double burden malnutrition, diet and diet quality are important to understanding under and over nutrition. One respondent stated: “I think the issue has been largely focused on diet from the perspective of undernutrition and nutrient inadequacies, to date, at least in most low- and middle-income country settings…But I think there hasn't been much attention to the other side of the equation, which is prevention of diet related noncommunicable diseases, and the over-nutrition that can result from poor quality diets.”

Assessing trends across countries globally, within countries, and between different socioeconomic classes within countries was another theme for reasons to conduct global diet quality monitoring. Respondents highlighted that many countries lack national surveys that collect dietary data or measure diet quality and are nationally representative. Monitoring diet quality would, therefore, be useful to understand trends in diets across different countries. Within countries as well, respondents described the need for disaggregated data that could better show dietary differences within regions of countries or between urban and rural regions and socioeconomic levels. Respondents also described the need for age and sex disaggregated data to understand the dietary changes and challenges for different age groups (e.g. adolescents, adults) and genders.

Despite describing various reasons for why global monitoring for diet quality should be conducted, many respondents (n=10) cautioned that feasibility is a critical challenge. First, some respondents perceived it to be impossible to monitor some concepts of diet quality because of the amount of data that would need to be available across countries to address these concepts, the funding and capacity needed to monitor diets across different contexts, and the time burden on participants and data collection. Some respondents specifically stated that to conduct diet quality monitoring globally, the field would have to rely on simple indicators that represent the most important concepts of diet quality. For example, one respondent highlighted: “So I think that monitoring nutrient [intake] is not possible globally. It’s really tough… For example, when you think about the sweet snack food, I mean, what goes into that category is vastly different depending on what part of the world you’re in. So, it’s complicated and it’s tricky. How do we say what is unhealthy? What constitutes unhealthy?”

Another respondent further explained that it is important to focus on what can be actually monitored: “So, some of the indicators for quality of diet regarding processed foods rely on data that I just don’t see that we are going to have regularly enough to be monitoring. For example, if you take an indicator like percent of calories from ultra-processed...”
4. Objectives for monitoring

foods, that has increasingly been shown to be associated with different chronic disease risk factors for example. We are very, very, very far from having the quantitative dietary data that we would need globally to be able to say anything about that. So, I am also influenced by what can we monitor? In regard to that, I think we can, again there are some things that may be more feasible for monitoring such as frequency and quantity of sugar-sweetened beverages.”

4.2 Information system for diet quality monitoring

We asked respondents to describe what should be part of an information system on diet quality monitoring. Overall, respondents agreed that such a system should consist of simple indicators that can be collected uniformly across different countries in order to facilitate comparison. A diet quality monitoring system, according to respondents, would also have to include information on dietary intake that researchers have agreed to be important for healthy diets and disaggregate information by different population and age groups. Furthermore, food environment indicators will be important to monitor, according to respondents, in order to understand the context and barriers that populations face in order to access healthy diets. Lastly, a few respondents discussed the need to improve and use existing survey platforms and available data, where possible, when monitoring diet quality as some of these platforms already reach many countries and contexts.

a. Simple and uniform measures

According to respondents, an information system for global diet quality monitoring will need to consist of simple and uniform measures and indicators. Respondents believed that some of the concepts they used to define diet quality are difficult to measure. Therefore, the nutrition community should identify simple proxies validated to measure the different concepts in order to facilitate monitoring globally. As one respondent stated: “there needs to be more simplistic measure to see if they’re moving the needle on any of these [diet quality concepts]. That’s really helpful, they don’t need to go and measure exactly how much calcium is being consumed by children.” Furthermore, these uniform measures should be able to be applied across countries to facilitate comparison, as this is currently a challenge due to the different levels of information that countries collect on diets, especially between low or middle-income countries and higher income countries.

b. Dietary intake

Dietary intake measures, whether indices, proxy indicators, or just by food groups, was the most mentioned component of what a diet quality monitoring system should consist of. Overall, there was a consensus among respondents that such a system should contain some level of food intake data to assess adequacy, dietary diversity, moderation, and trends on the consumption of foods associated with non-communicable diseases. Some respondents specifically highlighted that information on the intake of fruit and vegetables, animal source foods, and foods and nutrients related to poor health outcomes such as saturated fat, sugar, sodium, and highly processed foods would be the key food groups to include. Other recommendations also included increasing the number of food groups used to collect data and clearly defining food groups in order to facilitate comparison across different countries and contexts. Lastly, a couple of respondents suggested the need to, whether qualitatively or quantitatively, measure the frequency or quantity of consumption instead of only collecting information on food groups consumed.

c. Disaggregated data

Traditionally, dietary assessment has mostly focused on vulnerable groups such as infant and young children and women of reproductive age, but it has become important to better understand diet quality among different population groups such as by age groups, gender, socioeconomic levels, and variations within countries and geographic regions.

Respondents believed that disparities may exist within populations when it comes to diets (e.g., men’s and women’s diets), but that it is not easy to assess these disparities. A global diet quality monitoring system should therefore be able to provide more age-specific information. This was especially important for children two to five years old whose diets are may now be increasingly consisting of highly processed foods and understanding differences between younger women of reproductive age and those who are older, or younger versus older adolescents. The ability to assess gender differences was also said to be a component that should be important for a global diet quality monitoring system. As one respondent stated: “…I think that’s the reason why women’s diets
in particular have been highlighted. But having data on men's diets would, I think, make that case even clearer if indeed there is gender bias, or if everybody's diets are bad, and what to do about that.”

Furthermore, diet quality monitoring should provide information to assess diet quality by socioeconomic status, sub-nationally so that countries can assess differences across different regions, and urban and rural differences, according to respondents.

d. Food environment

More people described the food environment as a component to include in an information system for diet quality monitoring than those who mentioned it as a concept within the definition of diet quality. Of those who described food environment aspects to include in global diet quality monitoring, their responses fell into 3 themes: food availability, food price, and the space within which food choice is made.

To understand people's quality of diets, a couple of respondents believed that food availability should also be monitored to better understand choice and intake within countries and within local communities. To achieve this, information on food production and food supply would be important. Again, for these concepts, respondents highlighted that some of this information already exists in different ways through different platforms. Respondents mentioned that food prices are currently monitored in different aspects, especially through work from FAO. Respondents also mentioned that a diet quality monitoring information system should provide information on the cost of people's diets and the cost of healthy diets, something that a few initiatives have been working to address.

Lastly, a few respondents (n=3) discussed including food environment information to explain the environments in which people make food choices and the drivers of those food choices. Respondents admitted, however, that research in this field is still emerging. “I think there is a lot of interesting new research being done in the area of food environments. It is new. It is a new area, and I don't think we've got it fully figured out yet exactly. What are the key indicators…? But I think it's important to at least at a very general level say we need information not only about what people are eating, but also the food environments in which they are making choices about what they're going to bring home to consume”, stated on respondent. One respondent also mentioned that there is more research on how taste, price, and convenience drive choices in countries such as the United States of America but that this type of research is still needed in other countries and contexts.

e. Using existing data or survey platforms

Though only mentioned by three respondents, a theme that emerged on diet quality information systems was to use or reinforce existing data or survey platforms such as FAO food balance sheets, the Multiple Indicator Cluster Surveys (MICS), and household expenditure and consumption surveys to provide diet quality monitoring. These respondents acknowledged shortcomings and gaps within these already existing platforms but believed efforts should focus on how to reinforce, improve, or add questions to these surveys that are already conducted within many countries.

Two of the three respondents described that household food consumption surveys are conducted in nearly all the countries in the world and could help provide diet quality data. Two respondents also discussed that FAO already collects food price data, food production levels, per capita production which can all inform the food environment concept of diet quality. Food balance sheets were also described as a tool that the nutrition community has unfairly ignored and overlooked its potential. “I think that the highest priority for global diet monitoring, frankly, is improving the FAO's food balance sheets, and having, on the one hand, the nutrition community recognize and respect the potential value and understand the value of FAO food balance sheets. Because, currently, the nutrition community, because of its history of dietary assessment and individual intake surveys, has been extremely disparaging of the food balance sheets in a way that is utterly unmerited. The food balance sheets are much more informative than most people in the nutrition, and dietetics, and public health community understand,” stated one respondent. When asked to elaborate, this respondent continued: “Kitchen and plate waste is explicitly the difference between FAO food balance sheet consumption and intake. That total consumption, again, which includes kitchen and plate waste as well as intake, is, in many ways, vastly better than the mean of a survey. The reason why it's better than the mean of a survey is because it's not subject to sampling error. It captures all the extremes of the population, which are not observed in surveys, and it is year-round”.
All three respondents within this theme highlighted that existing surveys can provide information on some aspects of diet quality and that using these resources may be more efficient than introducing new surveys or data collection methods. For example, one respondent mentioned that as these surveys are already conducted in almost every country, making improvements or adding questions to the food consumption module would be efficient because “it leverages the absolute mandate, the requirement, the need that governments have to do these surveys all the time.” When it comes to FAO balance sheets, it was suggested that “because food balance sheets are neglected for many important crops. There’re not good food balance sheets for many fruits and vegetables, and for many fish. To improve global diet quality measurement, job one, in my opinion, is to improve the understanding and quality of food balance sheets.”

4.3 Use and users of diet quality monitoring information systems

Establishing a diet quality monitoring would be of great use for informing policymaking, designing programs, providing public health advice and guidelines, and for informing sectors outside of nutrition such as the trade, agriculture, and private sector, according to respondents. A diet quality monitoring system would therefore provide information that could be used not just by policymakers, researchers, and program designers and implementers, but also for those working in industries that affect nutrition and everyday citizens.

a. Policy and policymakers

One of the themes that emerged in how monitoring data in diet quality would be used was for advocating for various policies and programs that could correct or maximize health outcomes. Policy advocacy could span various fields, according to respondents, including food, nutrition, trade, and fiscal policies. Understanding gaps in dietary intake could inform policymakers on improvements needed in the food supply, trade that affects food supplies and availability, fiscal policies to subsidize healthy foods or taxation of unhealthy ones that are highly consumed, etc. Some respondents seemed to think that global diet quality monitoring would be most useful for national level policymakers who ultimately make decisions within countries that serve the needs of populations. It would be, therefore, important that there is demand within different countries for such data. It would also be important that the metrics or indicators used in such a monitoring system be understandable, informative yet easy to interpret, and help countries identify priority areas in dietary gaps and within-country differences.

b. Programs and program designers or implementers

A diet quality monitoring system could also be useful for informing international and national programs. The monitoring system could help formulate food aid programs, national-level programs, and different interventions by providing information on existing gaps and the dietary challenges faced by populations to help design programs. Information on food prices and food availability could also inform programs that provide healthy foods at cheaper prices. Such information could also be used by civil society to advocate for programs that address specific dietary challenges that exist within countries and communities and help them to keep government accountable.

c. Public health advice and guidelines

Though less often mentioned, respondents also believed that information from a diet quality monitoring information system could be used for nutrition communication messages and education and providing dietary guidelines. Monitoring and communicating information on diet quality would place importance on the monitored indicators which may be useful for ordinary citizens who make decisions and choices regarding their diets and food consumption.

d. Research

Global diet quality monitoring could also be useful for research purposes. Respondents believed monitoring diet quality globally could help build the evidence base for nutrition and public health research by investigating various diet related research questions in various contexts. Such data could also be used by normative global agencies such as FAO, UNICEF, and the WHO to assess global trends and progress and to inform technical country reports.

e. Sectors beyond nutrition

Some respondents highlighted that information systems for diet quality monitoring are not meant for just nutritionists and health stakeholders. Rather, as noted in their definitions, such information can be informative
and useful for sectors outside of nutrition such as agriculture, international trade, industry and the private sector, environmental sectors, and infrastructure.

Growers and producers in the agriculture sector could use dietary quality information to inform the sector on production needs and gaps in different contexts and guide investments on which foods to supply. Information on food prices and imports and exports, and dietary gaps could also inform investments in food production and food supply for the private sector and international trade. Food supply, availability, and diets also have implications on the infrastructure sector that establishes roads and ways to connect different areas and the private sector that supplies food. Furthermore, some respondents also believed that global monitoring on diet quality could provide information on the nutritional impact of unhealthy diets and the extent to which such foods are being consumed globally, information that would be important for food industries to understand their impact. Overall, respondents who mentioned this response highlighted that information provided within a diet quality monitoring information system could be useful all along the nutrition value chain from production to distribution.

The information system could also be used by environmentalists to better monitor relationships between production and climate change or other environmental factors. As one respondent highlighted: “…when we think about the environment, these are also components that factor in. For example, animal products, beyond everything about it in terms of nutrition have a lot of implications for climate change and where those animals are grown makes a difference. In some places they will be more efficiently grown than in other places, the impact will be, so there are these things outside of nutrition that are also related and important in terms of tracking diet quality components.”

A couple of respondents also spoke about the usefulness of such information for those in charge of creating or regulating food environments in cities, workplaces, and schools.

5. Gaps

One of the objectives of this landscaping exercise was to identify gaps and areas of improvements in the global monitoring of diet quality where TEAM could contribute. Given this objective, we asked respondents to share their perceptions regarding the gaps that may exist when it comes to diet quality monitoring. Respondents shared these views based on four categories: concepts, frameworks, survey platforms, and indicators on diet quality. Overall, respondents perceived there to be gaps in all these four categories, though less so when it comes to diet quality frameworks.

5.1 Concept

Almost all respondents mentioned that gaps exist in how diet quality is conceptualized. Respondents discussed that there is a lack of official agreement on how to define diet quality which in turn has implications on how to monitor diet quality. Respondents mentioned that the work to define quality diets is evolving and that today, there are many different definitions of diet quality being used or promoted in various forms such as the WHO fact sheet, the definition elaborated by the EAT-Lancet Commission, and the suite of dietary risk factors identified by the Global Burden of Disease. Respondents believed that efforts should be placed on consolidating these different definitions by looking at where there is consensus and where there isn’t enough consensus in order to consolidate a clear definition.

Respondents also highlighted that this definition should come from normative global agencies who represent member states and provide global guidelines. As one respondent stated: “EAT-Lancet tried to do that [define diet quality] at the scientific level, which is great, and people have taken it up right away because it’s so needed. But it’s not normative guidance. It’s a group of scientists that have looked at the scientific literature, so it doesn’t have the weight politically across countries that even the brief fact sheet of WHO does.” Furthermore, such a definition will have to be comprehensive and should include more than just a few pages, according to some respondents. “That said, it would be great to have more formal, updated, and complete guidance from the global normative agencies. This shouldn’t be a five-page fact sheet. It should be a 200-page report that then has a five-page fact sheet derived from it”, stated one respondent.
Other gaps that remain when it comes to how diet quality is conceptualized include the need to really integrate sustainable diet concepts into definitions of diet quality, and the need to increase empirical evidence from low- and middle-income countries concerning how quality diets are conceptualized instead of relying on research that mainly comes from high income countries.

5.2 Frameworks

Seven respondents discussed gaps that exist within diet quality frameworks. Their responses were quite varied, however. A few respondents believed that gaps in diet quality frameworks were related to how diet quality is conceptualized. These respondents believed that diet quality frameworks should ensure that all the concepts that define diet quality, including non-dietary concepts, be reflected. These respondents, however, also believed that some of these concepts, such as culturally acceptable diets, are important when defining diet quality but difficult to operationalize.

A couple of respondents did not think there were gaps when it comes to frameworks and diet quality. These respondents believed that existing frameworks already provide what is needed to think about diet quality. “I think there are a lot of different conceptual frameworks out there in terms of diet quality that are not very different from each other. The devil’s in the details…I think that the frameworks are there, and I don’t think it would be impossible to make them speak to each other. That one is not to me as big a gap”, stated one respondent. The shortcoming for these people was that diet quality is not explicitly mentioned in the SDG framework though it is evident that diet quality is necessary to achieve the nutrition targets within this framework. “There’s nothing about diets in the SDGs…it would have been amazing to track some kind of diet indicator”, stated another respondent. Lastly, one respondent did not think there were any accepted global frameworks for diet quality. Rather, there are indices that capture whole diets such as DASH.

5.3 Survey platforms

Three main themes emerged when respondents discussed gaps in survey platforms for diet quality. These themes were 1) where to collect or get diet quality data, 2) lack of reach of platforms to capture information globally, and 3) lack of harmonized methods used in assessing diets.

The most mentioned gap in survey platforms is how to collect all the data needed for a diet quality monitoring system. The first challenge within this theme is that there are no survey platforms that could provide population representative data globally for global diet quality monitoring. Some age groups such as children 5-14 years of age remain excluded from existing and developing survey platforms for diet quality. Some needed data are also not available regularly enough to be monitored. One example given was that the quantitative data needed to construct an indicator such as the percent of calories from ultra-processed foods are not regularly available to be monitored. Furthermore, respondents believed that there was a lack of simple or single platforms that could provide all the data needed for diet quality monitoring because such data represents information from various sectors (e.g., agriculture, health, trade or commerce). Some respondents, however, believed that it would be more useful to find ways to use existing survey platforms such as FAO food balance sheets, household expenditure surveys and household consumption surveys, and data from the agriculture sector to conduct diet quality monitoring.

The second challenge in diet quality monitoring is the lack of reach of existing survey platforms. This challenge was discussed in terms of the differences that exist in survey platforms that provide dietary data in high income countries versus those in low- and middle-income countries. Respondents highlighted that survey platforms in some of the high-income countries are extensive and provide rich data while it may not be the case in low income countries. Also, there is a gap in survey platforms that collect information in a uniform way across a wide set of countries. And since there isn’t a single uniform platform to collect diet quality monitoring data, so is there a gap in the methods used in these different platforms which leads to challenges in ensuring that surveys are using accurate methods of diet assessment that are validated for the different age groups and geographies of the world. As one respondent clearly described “…what’s really lacking is the availability of survey platform to collect this information across a wide set of countries. And I think that that’s obviously a big gap…if there was a platform where it was devoted specifically, for example, to collecting diet-related topics and issues for population, I think that would allow much more for collecting high quality standardized data across the set of countries. And that doesn’t exist right now.”
5.4 Indicators

Respondents described several gaps that exist when it comes to indicators that could be used for global diet quality monitoring, but they also highlighted that there is innovative work being conducted in developing new indicators that could be used to inform monitoring systems for diet quality in the coming years.

One gap that a few respondents described was that there was a need for an indicator or index that could capture the different dimensions of diet quality instead of indicators measuring just one dimension. Others, however, believed that once a clear definition is agreed upon, it would make it easier to decide which indicators could be used to operationalize each concept.

Other challenges described when it comes to indicators was that some of the existing and widely used indicators are validated to assess nutrient adequacy but do not capture any dimension related to overnutrition. For example, respondents believed that indicators should be able to better capture the consumption of sugar sweetened beverages, packaged foods, and highly processed foods. Respondents also described the need for better clarity on how to classify foods across countries as some of the categories currently used are too broad and can lead to classification errors. Respondents recommended increasing the number of food groups used in certain indicators to improve how study respondents classify their consumption.

Lastly, another gap that emerged during interviews is the lack of diet quality indicators for certain age groups and gender groups. Respondents especially highlighted that no existing indicators or those currently being developed are looking at the diet quality for school-aged children and young adolescent boys and girls, age groups where dietary habits are being formed.

Despite these challenges, some respondents acknowledge that there is innovative work being done to develop new indicators that measure different concepts of diet quality. Respondents believed that in the coming years, and with clearly defined concepts for diet quality, there will be available indicators for researchers and global normative agencies to choose to use in diet quality monitoring. These indicators will also have to be easily useable in both high- and low-income countries so that the tools used across countries are harmonized. One respondent highlighted that it will be important to validate the tools being developed instead of research groups constantly creating new tools: “we should start to focus on what do we have? How well do they work and seeing if they could be modified, and formally testing and validating...these existing tools. And any efforts that would focus on the development of new novel tools, should really be focused on actually testing validity and reproducibility, instead of the constant development of new metrics which are never duplicated or used by any other study.”

5.5 Country-level gaps

Some respondents explained that the primary users of a global diet quality monitoring systems would most likely be countries and their governments. Therefore, it will be important that there is country buy-in on the need to monitor diet quality, the indicators used, information provided by its information system, and the perceived importance of this information. Some respondents believed that many countries would welcome such an initiative given that many countries have developed food based dietary guidelines but lack ways to assess how their populations are eating, following the guidelines, and how this is changing over time. Diet quality monitoring systems that provide information on dietary intake and food environment information such as supply, availability, and pricing, could help governments track what their food system looks like and how they are meeting the goals they wish to meet, given their country-specific guidelines. One of the key gaps mentioned when it comes to what is needed at country level would be the funding and capacity needed to establish the collection of the data needed. A few respondents believed that donors, as well, would have to perceive the need to conduct diet quality monitoring globally to address these funding and capacity gaps.
6. Initiatives on diet quality

During interviews, we asked respondents to share information on their own initiatives and various initiatives working on diet quality that they may know of. Below are the projects and programs that were mentioned during interviews in no particular order.

a. FAO/WHO Global Individual Food consumption data Tool (FAO/WHO GIFT)

FAO and WHO work together to provide a publicly available global database that contains information on quantitative individual food consumption surveys and provides indicators in the area of nutrition, food safety and (soon) environmental impact. The platform harmonizes information collected through large nationwide surveys and small-scale surveys to provide gender and age-disaggregated food-based indicators in order to inform policy makers at country level. FAO/WHO GIFT is in part funded by the Bill and Melinda Gates Foundation until 2022.

Source: [http://www.fao.org/gift-individual-food-consumption/overview](http://www.fao.org/gift-individual-food-consumption/overview)

b. Intake – Center for Dietary Assessment

Intake was established by FHI 360 and the center aims to inform evidence-based nutrition and agriculture programs and policies in low- and middle-income countries through increased availability, quality, comparability, and use of dietary data and metrics. Intake is currently working to develop tools, templates, and guidance pieces related to the planning, design, collection, and analysis of data from quantitative dietary surveys. Some of its objectives include providing technical assistance to governments and survey implementers, supporting research to simplify and advance dietary assessment methods, develop metrics and tools to track progress in achieving healthy diets, and convene partners for shared learning related to collection, analysis, and use of dietary data. The project recently published a technical report that provides a basis for the development of diet quality metrics for women of reproductive age in low- and middle-income countries [https://www.intake.org/sites/default/files/2019-09/IntakeMeasuringDietQuality_Jan%202019.pdf](https://www.intake.org/sites/default/files/2019-09/IntakeMeasuringDietQuality_Jan%202019.pdf). Intake is currently funded from November 2016 to January 2021.

Source: [https://www.intake.org/Intake%20Overview%20Brief.pdf](https://www.intake.org/Intake%20Overview%20Brief.pdf)

c. Global Burden of Disease

The Global Burden of Disease is a comprehensive research program on the burden of diseases, injuries, and risk factors across the world. In 2019, the Global Burden of Disease collaborators published a paper on the health effects of dietary risks in 195 countries. The study showed that poor diets, driven by the high intake of sodium, low intake of whole grains, and low intake of fruits, are one of the top risk factors for morbidity and mortality.


d. The International Dietary Data Expansion Project (INDDEX)

INDDEX is a concerted effort between the Friedman School of Nutrition Science and Policy at Tufts University, FAO, the International Food Policy Research Institute (IFPRI), and other experts. One of its aims is to facilitate the collection and use of high quality and timely food and nutrient consumption data in low-income countries. They seek to standardize and streamline the collection and analysis of food consumption data through innovative technologies, using existing data, and showing the relevance and need for improved food consumption data.

Source: [https://inddex.nutrition.tufts.edu/project-overview](https://inddex.nutrition.tufts.edu/project-overview)

e. Gallup Global Diet Quality Project

Given Gallup’s World Poll ability to conduct nationally representative surveys in over 140 countries across the world, the Global Diet Quality Project is an effort for the poll to collect diet quality monitoring data. These
efforts would allow for the comparison of diet quality data across countries, over time, and provide gender, age (adults 15 years and older), and income-disaggregated data. The project has designed indicators and validated them in two countries to measure population level adherence to diet quality recommendation defined by the WHO. Data collection and country-adapted questionnaire tool release in a first phase of countries is planned for 2020-2022.


f. Harvard and Intake

Intake has sub-contracted Harvard University to develop and validate new metrics of diet quality for women of reproductive age, with a specific focus on developing and validating metrics that are appropriate for use in low- and middle-income countries.

g. Harvard and PRIME Diet Quality Score

The Prime Diet Quality Score (PDQS) uses a simple screener to measure diet quality including in the context of nutrition transitions and double burden malnutrition. Respondents mentioned the work being done with this indicator.

h. CANDASA

The Changing Access to Nutritious Diets in Africa and South Asia (CANDASA) project is implemented by the Friedman School of Nutrition at Tufts University, IFPRI, and research partners in the countries of India, Bangladesh, Ethiopia, Ghana, Malawi and Tanzania. The project builds on the Indicators of Affordability of Nutritious Diets in Africa (IANDA) project which was implemented between 2015 and 2017. CANDASA specifically aims to measure the affordability and access to nutritious diets based on their nutritional quality over time and in different places. The project is funded for 2.5 years from December 2017 to June 2020.

Source: https://sites.tufts.edu/candasa/

i. National Information Platforms for Nutrition (NIPN)

NIPN does not work on measuring diet quality per se. The project was mentioned by one of our respondents because of the organization’s work on monitoring for national multisectoral coordination systems in nutrition. The platform is used by national and sub-national stakeholders in different countries to help them develop policies, design programs, and allocate investments. Users of the NIPN structure would be the same stakeholders who could use monitoring data on diet quality in their respective countries.

Source: http://www.nipn-nutrition-platforms.org/

j. EAT Lancet

The EAT-Lancet Commission on Food, Planet, Health produced the EAT-Lancet report, a scientific review of what constitutes a healthy diet from a sustainable food system and which actions can support a food system transformation. The commission consisted of 37 leading scientists from across the world.

Source: https://eatforum.org/eat-lancet-commission/

k. International Network for Food and Obesity Research, Monitoring, and Action Support (INFORMAS)

INFORMAS monitors and supports actions to increase healthy food environments to reduce obesity and non-communicable diseases. It is a network of public interest organizations and researchers. The network uses the INFORMAS framework which consists of 11 modules: 2 process modules that monitor policies in the public and private sector, seven modules that monitor the food environment (food labeling, food provision, food prices, food composition, food marketing, food retail, food trade and investment), and 3 outcome modules that monitor diet quality, burdens of obesity and its risk factors, and NCD morbidity and mortality.

Source: https://www.informas.org/modules/
l. WHO/UNICEF updating IYCF indicators

WHO and UNICEF have been conducting consultations over the last couple of years to look back on the use of IYCF indicators, how they have worked well, what can be done to improve them, and if additional indicators are needed.

Source: [https://www.who.int/nutrition/events/2017-team-technicalconsultation-iycf-indicators-meetingreport.pdf?ua=1](https://www.who.int/nutrition/events/2017-team-technicalconsultation-iycf-indicators-meetingreport.pdf?ua=1)

m. Global Dietary Database (GDD)

The GDD compiles data on food and nutrient consumption for children and adults by sex, pregnancy status, education, and rural and urban setting in many different countries across the world. The database especially focuses on children, adolescents, and pregnant and lactating mothers. The data provides information on both nutritional deficiencies and overnutrition and how they affect health worldwide.

Source: [https://www.globaldietarydatabase.org/](https://www.globaldietarydatabase.org/)

n. Diet quality indicators for adolescent girls

A couple of respondents mentioned that there are efforts to look at how to assess diet quality and nutrition intake in adolescent girls.

o. Data for Decisions to Expand Nutrition Transformation (DataDENT)

DataDENT aims to strengthen nutrition data systems in order to address gaps in nutrition measurement and the availability and use of nutrition data. It works to expand the use of data throughout the nutrition data value chain in multisectoral nutrition: defining indicators, creation and collection, curation, analysis, translation and dissemination, and decision making. DataDENT currently works in West Africa and South Asia, specifically in the countries of Ethiopia, Burkina Faso, Nigeria, Bangladesh, and India. DataDENT is implemented by the Institute for International Programs at the Johns Hopkins Bloomberg School of Public Health, IFPRI, and Results 4 Development. The project is funded from 2017 to 2021.

Source: [https://datadent.org/](https://datadent.org/)

p. A Global Review of Food-Based Dietary Guidelines

Some respondents discussed the review recently done by Herforth and colleagues on reviewing all available food-based dietary guidelines in the world. The review compared country food-based dietary guidelines to global recommendations to see if there are big regional differences or if countries are putting out guidance that’s similar to global guidance.


q. FAO work on MDD-W (Mean Dietary Diversity – Women)

One respondent discussed work being performed by FAO related to use of the MDD-W FAO and partners are FAO carrying out research project in 3 countries with the objectives of developing a supplemental guide on good practices for MDD-W data collection, and they are also providing technical assistance to countries on adaptation and use of the MDD-W tools.

r. Food systems dashboard

One respondent mentioned a collaborative project funded by GAIN, Johns Hopkins and partnering with University of Michigan on a “food systems dashboard” that looks at food systems broadly, such as food supply chains, food environment, and diet data. The product would be a dashboard that countries could use to assess health of their food systems.

s. The George Institute for Global Health

The institute has several initiatives related to nutrient profiling of processed foods. Based in Australia, they have expanded their work (including the ‘FoodSwitch’ mobile app and comparative studies) to include several middle-income countries (India, China, Fiji, South Africa).
7. Role of TEAM

Some respondents explicitly stated that they did not know about TEAM or its mandate and believed that the group could be more promoted. Some of the respondents who explicitly stated that they previously had not heard of TEAM recommended that the group should communicate its mandate, how long it will be around, and its goal for the next five years so that others in the nutrition community can be aware of the group.

Otherwise, respondents described three roles they believed TEAM could play in diet quality monitoring. These roles were to 1) convene those working on diet quality to harmonize actions and what is being done by different groups (n=9), 2) set guidelines on what indicators to use to monitor diet quality (n=7), and 3) advocate for diet quality monitoring to donors and countries (n=4). Lastly, one respondent believed that TEAM’s aim to harmonize standards and tools in monitoring, specifically for diet quality, will be helpful in coming years but that currently there is still a lot of research that remains to be done.

Most of the respondents believed that TEAM’s role would be most useful if the group could convene different actors working on diet quality in order to synthesize and harmonize what is being done across groups and decide the advantages and disadvantages of various approaches in order to decide which methods, tools, or indicators are best to use. Respondents who mentioned this response highlighted that people are measuring diet quality in different ways and TEAM could be positioned to provide a macro level view or synthesis of what is done and what is under development. Within this response as well, a couple of respondents also described the need to convene actors from different fields such as agriculture, environmental science, trade, not just nutrition and health, because diet quality monitoring also affects these sectors.

Some respondents also believed that TEAM, given its association with the global normative agencies of WHO and UNICEF, could be positioned to help set guidelines on how to measure diet quality. Respondents mentioned that TEAM could be tasked with helping to define diet quality, deciding which indicators to use for diet quality, providing operational guidance on which indicators, modules, methods, or questions to use in surveys or monitoring systems.

The third role for TEAM was advocacy. Respondents discussed the need for the nutrition field to discuss diets and diet quality more quantitatively and they saw TEAM as a potential advocate for this. Furthermore, they believed that TEAM’s work in diet quality could also consist of advocating to donors and countries for the need to monitor diet quality and the funding needed in this endeavor. Furthermore, one respondent mentioned that TEAM could help to advocate for the inclusion of more diet quality questions on surveys such as the Demographic and Health Surveys and the Multiple Indicator Cluster Survey.

Lastly, one respondent believed that given TEAM’s role in facilitating “shared learning and the development of harmonized standards, tools, and approaches…and recommend priority indicators for global monitoring” was premature in the domain for diet quality. This respondent believed that research was still developing, and that methods and tools are still being established but that TEAM could play a role in harmonizing methods and tools for diet quality monitoring in the coming years: “I think researchers are working on those questions. But to my mind, it seems early for an entity like TEAM to get engaged…that work needs to be produced, and then there needs to be a time to field test and gain experience. I mean, the role that I would see potentially for Team is then to convene a meeting where those experiences with the different tools have been shared, can be shared. And there can be a meeting to discuss challenges and promising approaches and steps for moving forward. But it seems to me that’s something that would potentially have to be five to seven years out.”