Are the Ethiopian Dietary Guidelines in line with what people believe to be a healthy diet and what they consume

Julia Glaser [2], Getenesh Alemayehu [1], Katherine Pittore [2], Legesse Abate [1]

[1] Stichting Wageningen Research Ethiopia

[2] Wageningen Centre for Development Innovation

RAISE-FS working paper #014

WAGENINGEN UNIVERSITY & RESEARCH

RAISE-FS Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems

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Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE FS)
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Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems

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The influence of knowledge on unhealthy consumption patterns is often exaggerated, as seen in the inconsistent outcomes of nutrition education programs. The recently introduced Ethiopian food-based dietary guidelines (FBDG) seek to tackle this issue by integrating nutrition education and messaging. However, rural Ethiopians' current beliefs and consumption habits do not completely align with the FBDG. While nutrition messaging may contribute to changing these consumption patterns, it is evident that knowledge alone is insufficient to instigate change. This working paper presents the findings of the investigation, indicating that future initiatives aiming to promote healthier diets should take into account not only nutrition education but also enhanced access to a variety of nutritious foods.

Keywords: nutrition, food-based dietary guideline, belief, Ethiopia

This manual can be downloaded for free at https://doi.org/10.18174/658761

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Photo cover: Andualem Tadesse

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Preface

Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE-FS) is a four-year program funded by the Dutch Embassy in Addis Ababa and hosted by Stichting Wageningen Research Ethiopia based in Addis Ababa, to bring about transformation in the Ethiopian food system. RAISE-FS will develop and implement a demand-driven and interdisciplinary approach to Research for Food System Transformation (R4FST) and as such contribute to the Government of Ethiopia's transformational agenda.

RAISE-FS adopts the food system approach as a Theory of Change (ToC), which helps in analysing the drivers and food system activities that contribute to the transformation of the food system by addressing leverage points, resulting in increased productivity, enhanced value chain performance, and improved human nutrition for food security while minimizing environmental impact and ensuring social inclusion.

The project aims to leverage transformation in Ethiopian food systems, covering the spectrum from food-insecure households and regions, to better-off households that are food-secure and can realize production surpluses, towards commodity commercialization efforts that contribute to rural and urban consumption demands and export.

Contact : info.raisefsethiopia@gmail.com
More information : www.raise-fs.org

List of abbreviations and acronyms

DGLV	Dark Green Leafy Vegetables
DQQ	Diet Quality Questionnaire
DDS	Dietary Diversity Score
EFBDG	Ethiopian Food-Based Dietary Guidelines
NGO	Non-Governmental Organization
RAISE-FS	Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems
SNNPR	South Nations, Nationalities and Peoples Region
SWR	Stichting Wageningen Research
WCDI	Wageningen Centre for Development Innovation, Wageningen University & Research
WUR	Wageningen University & Research

Summary

Unhealthy consumption patterns are often assumed to be based on a lack of knowledge. One of the purposes of the newly developed Ethiopian food-based dietary guidelines (FBDG) is to play a role in nutrition education and messaging. However, studies on nutrition education show mixed results and nutrition education programs are often most effective when they also include increased access to food, suggesting that knowledge alone is often not enough to change diets. This report considers the current beliefs around a healthy diet as well as the consumption patterns of rural Ethiopians, and their alignment with the FBDG, to inform future activities which plan to use the guidelines as a tool to change the consumption patterns towards healthier diets.

Methods: Data comes from quantitative and qualitative data collected through the baseline study of the Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE-FS) project. Quantitative data on current consumption patterns were collected using the diet quality questionnaire (DQQ). Qualitative data on the current beliefs on a healthy diet were collected using focus group discussions (FGD).
Result: the current perception of a healthy diet is not in line with the guidelines for the following food groups: consumption of sugar, the consumption of legumes by men, the consumption of vegetables in the previous Southern Nations, Nationalities, and Peoples' Region (SNNPR) region, the consumption of vegetable oil by all, especially by women, and the consumption of nuts and seeds. The current consumption patterns and other research suggest that nutrition messaging could help change diets to be more in line with the Ethiopian FBDG.

However, while people are aware of the healthiness of fruits, animal-source foods, and vegetables (in Oromia and Amhara) and the recommendation to consume at least four food groups per meal, people are still not able to regularly consume these foods. Nutrition messaging alone will probably have a limited effect on increasing the consumption of these foods.

1 Introduction

In 2022, food-based dietary guidelines (FBDG) were developed for the Ethiopian context, considering the priority diet-related health challenges, current eating habits and current food systems (Ethiopian Public Health Institute & Ministry of Health, 2022). The guidelines contain 11 key messages that provide dietary recommendations for optimal health and to increase the diet quality of the Ethiopian people (see Table 1). One of the potential applications of the FBDG is to influence food choices towards healthier diets through nutrition education.

There is also a commonly held belief among development workers that people do not eat a healthy diet because they don't know or because they did not receive an education. Despite that, some studies show that this assumption does not always hold. Research conducted by Leng et al. (2017), for example, shows that knowledge and beliefs about (healthy) food is only one part that influences people's food choices. Other identified determinants of food choice are biological such as hunger and taste; economic reasons such as income and cost of food items; physical factors such as access, knowledge, skills and time; social determinants such as culture; and psychological reasons such as mood and stress (Leng et al., 2017). Can nutrition education change dietary practices? A systematic review on the long-term effectiveness of nutrition education for adults by Eyles and Mhurchu (2009) showed that nutrition education programmes which tailor their messages to specific contexts and populations are more successful Click or tap here to enter text. Another related study by Watson et al. (2023) also shows that access to nutritious food is an important requirement for nutrition education to change food consumption patterns.

Table 1 Key messages from the FBDG (Ethiopian Public Health Institute & Ministry of Health, 2022)

	Key messages
1	Diversify your diet by selecting from at least 4 food groups in every meal and six food groups every day
2	Every day, eat 80–120 grams of legumes such as beans, chickpeas, peas or lentils
3	Eat 100–200 grams of various fruits and vegetables of different colours every day, such as bananas, papayas, kale, carrots and tomatoes
4	Diversify your diet with 10–20 grams of nuts and oilseeds such as groundnuts, and sunflower or sesame seed
5	Add animal-source foods such as eggs and meat (60 grams) and dairy foods (300–400 grams) to your meals every day
6	Drink 8–10 large glasses of clean water daily
7	Be physically active for at least 30 minutes a day
8	Take up to 15–20 grams of fats and oils per day
9	Limit intake of sugar, sweets and soft drinks to below 30 grams per day
10	Limit salt intake to below 5 grams per day
11	Limit alcoholic drinks – both factory-processed and homemade – to no more than 2 glasses per week

The four-year Resilient Agriculture for Inclusive and Sustainable Ethiopian Food Systems (RAISE-FS) programme aims to bring about transformation in the Ethiopian food system. RAISE-FS develops and

implements a demand-driven and interdisciplinary approach to Research for Food System Transformation and it contributes to the Government of Ethiopia's transformational agenda (RAISE-FS, n.d.). One of the activities of RAISE-FS is to investigate how the Ethiopian FBDG can be used to develop context-specific nutrition education materials that can be implemented, together with nutrition-sensitive agricultural interventions including home gardens and poultry, to support improved diet.

1.1 Research aims

This study serves as formative research on how to tailor the messages in the Ethiopian FBDG towards the research communities of RAISE-FS. To inform nutrition education material development, this study primarily investigates differences between what people consume and what they consider a healthy diet, and how these beliefs align with the FBDG. Secondly, this study suggests which key messages of the FBDG have higher potential to change people's consumption when delivered through nutrition education, versus those for which other factors (access, affordability) may be more limiting than knowledge, and where nutrition education alone may have limited impact.

2 Methodology

In this report, the messages from the FBDG were compared with the current consumption patterns and the beliefs about a healthy diet of the study population in the RAISE-FS programme. The data collection was part of the baseline study of the RAISE-FS project, and it took place in Amhara, Oromia and the previous SNNP Region. For every region, participants were selected from three woredas who were purposely sampled. Within every woreda, two kebeles were chosen (see Figure 1). The study population consists of 926 people from different households. People were selected using stratified random sampling. The strata were based on gender, marital status and age. In total, the sample contained 191 (21%) female heads of households, 384 (41%) male heads of households, 147 (16%) females in male-headed households and 207 (22%) of youth people between the ages of 18 and 35 from both genders. For an elaborate description of the data collection method, sampling strategy and characteristics of the study population see the baseline report by Abate and Schaap (2022).

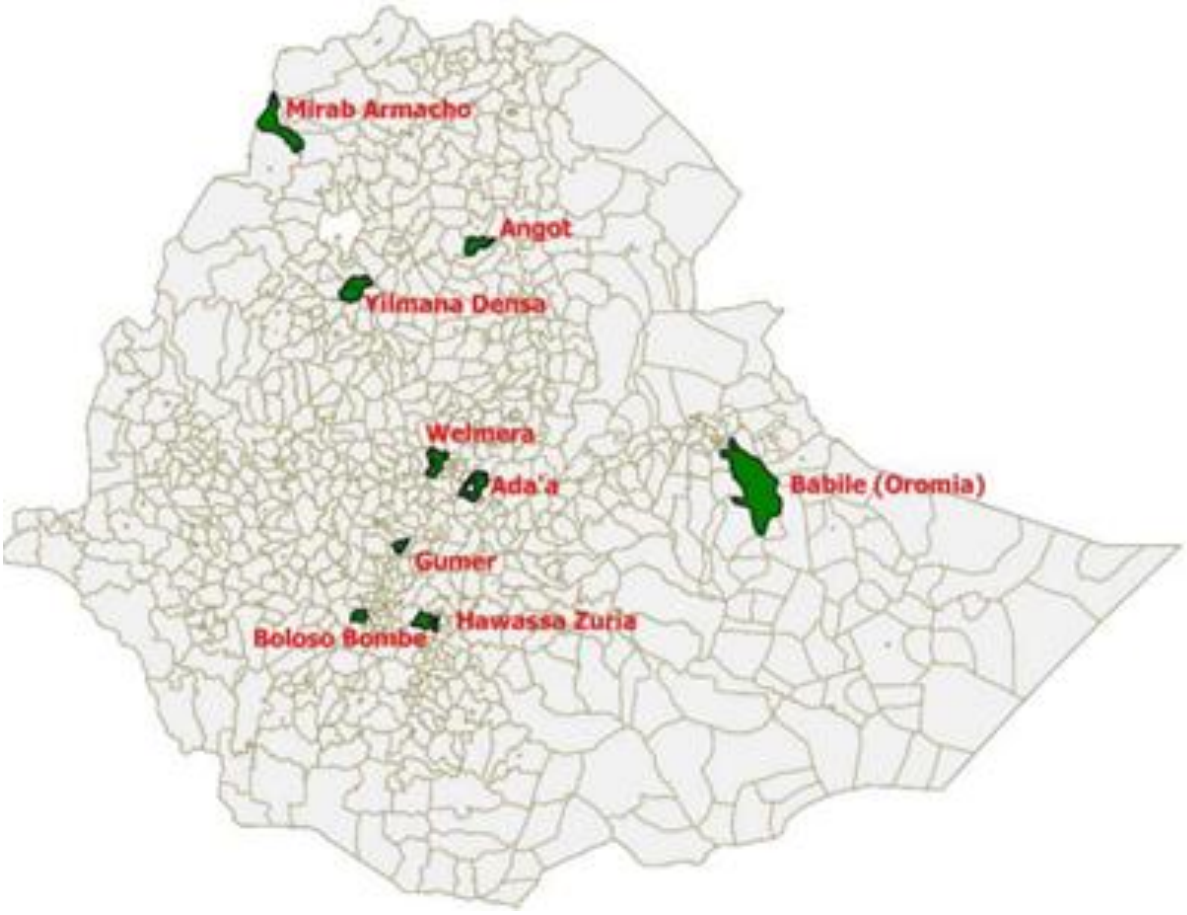

Figure 1 map of Ethiopia with the woredas RAISE-FS collected data

The data for this study were gathered using qualitative and quantitative data-collecting tools and compared with the FBDG. The section below describes in more detail which messages from the FBDG were evaluated in this study and how the dietary intake data and the perception of a healthy meal were collected.

FBDG messages selection: Only 7 of the 11 key messages included in the EFBDGS were evaluated in this study. Messages 6 and 7 (see Table 1) do not focus on food (rather on water intake and physical exercise), they were not considered. Additionally, messages 10 and 11 (Table 1) were about salt and alcohol intake which are not captured by diet quality questionnaires.

Dietary intake data: In line with the study of Baye and Yaregal (2023), dietary intake was measured using the Diet Quality Questionnaire. This intake data does not capture quantities consumed but asks if people consumed a certain food group in the previous 24 hours. Because of this, the study was not able to assess if people adhered to the FBDG in terms of recommendations around quantity. However, this study compared the percentage of the population consuming the food groups mentioned in the FBDG but did not look at the quantity consumed.

Perception of a healthy meal: Focus group discussions (FGDs) were used to collect people's perceptions of a healthy meal. In the FGDs, participants were asked to draw what they think a healthy meal looks like. FGDs of approximately 10-15 people were held for men and women separately. In total, 36 different focus groups were organized, and a total of 432 people participated in the FGD. Sensemaking activities were undertaken with the following woreda offices: agriculture, health, women's child and social affairs, cooperatives, trade and job creation. An elaborate description of the methodology used can be found in the tool guide description (Snel et al., 2022).

3 Results

3.1 Food group consumption and dietary diversity

Figure 2 below shows the average number of food groups, as defined by the food group diversity score (DDS) (FAO, 2021). On average, people consumed 2.9 food groups, out of a possible 10, with the lowest food group diversity score reported in the Amhara region (2.4) and the highest in Oromia (3.2). The differences between men and women were minimal, except in Oromia, where the average for men was 0.2 points higher. Even though consuming five or more food groups is associated with lower chances of micronutrient deficiencies for women of reproductive age (FAO, 2021), only 9.3% of women of reproductive age consumed the recommended five or more food groups.

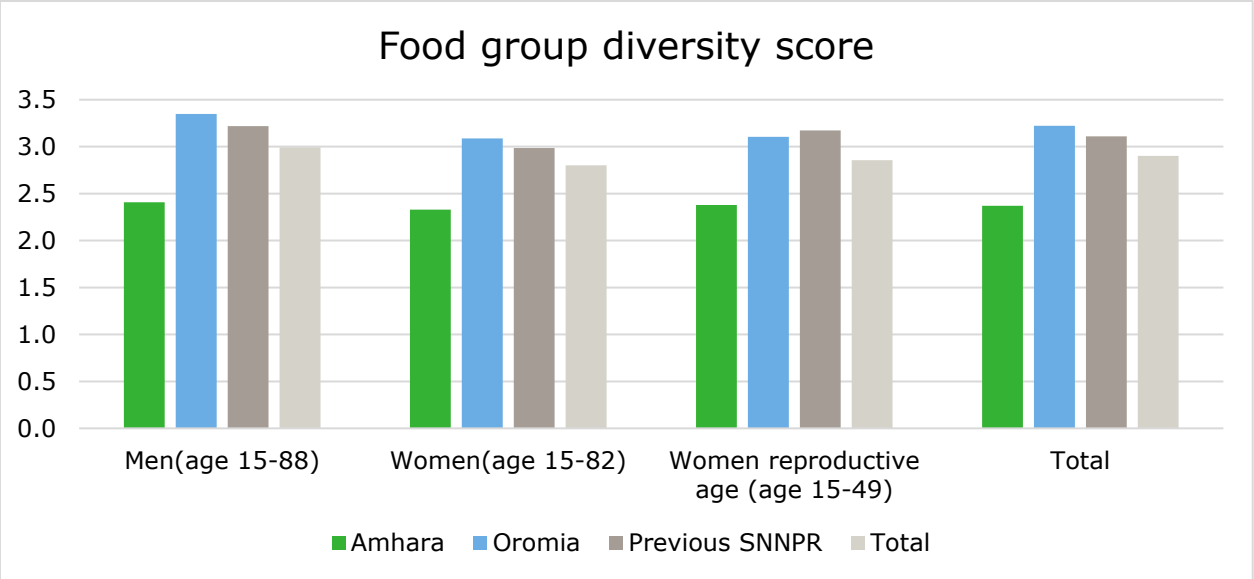

Figure 2 Number of Food Groups from the Minimal Dietary Diversity score for Women Consumed, per Region and for Men, Women and Women of Reproductive Age Separately.

Figure 3 below shows the percentage (%) of people consuming a specific food group. The most consumed food group for all regions was grains roots and tubers, with 99% consuming this food group. That was followed by pulses in Amhara and Oromia, 96% and 88%respectively and, in previous *SNNPR dark* green leafy vegetables (DGLV), 71%. DGLVs were the third most consumed food group in Amhara (with *a* rate of 21%), *and* the food group of other vegetables constituted the third most consumed food group in Oromia (53%) and in the previous SNNPR (44%).

The consumption of sugary products, including coffee and tea was also high. On average, 49% of the respondents consumed some sugary product over the last 24 hours following the day the data were collected.

The consumption of animal-source foods such as dairy, meat/poultry/fish and eggs were very low in all regions with respectively only 18%, 3% and 3% of the population consuming these food groups. Also, the consumption of fruits was extremely low with only 7% of the population consuming fruits. The lowest

consumption of all these food groups was found in Amhara with not more than 2% of the respondents consuming dairy, nobody of the respondent's consumed meat or eggs and only 1% consumed fruits.

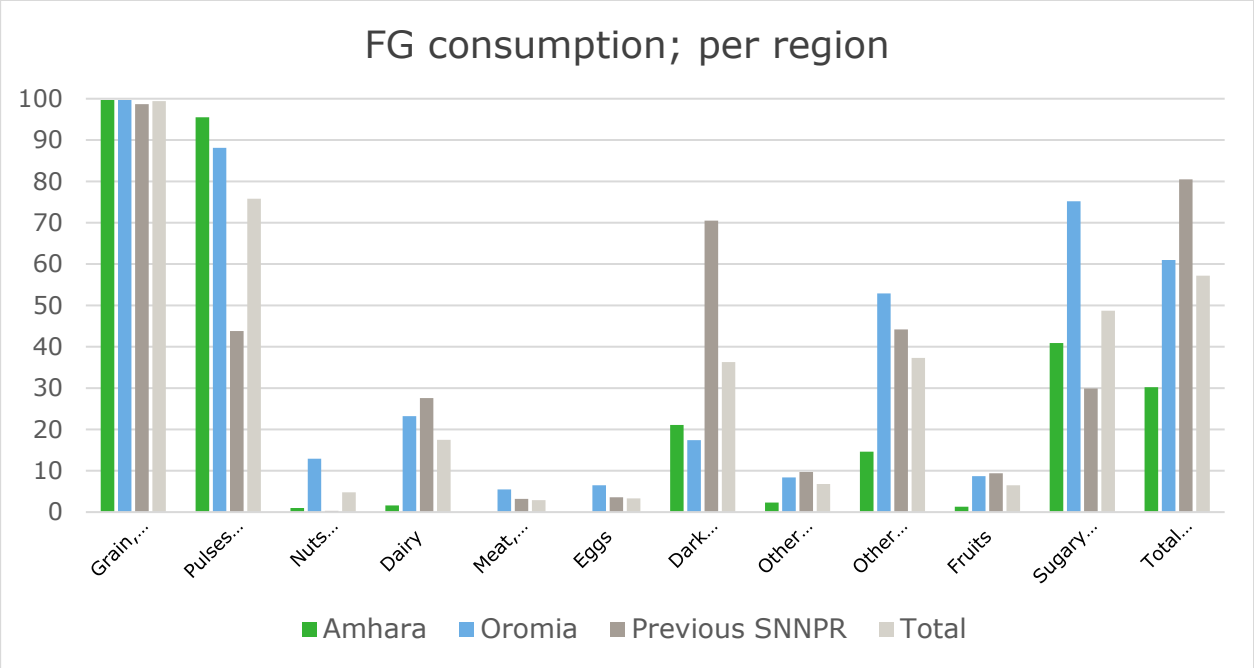

Figure 3 Food group consumption, per region.

** These food groups are not part of the minimum dietary diversity score for women*

As shown in Figure 4 below, there is hardly any difference in food group consumption between men and women.

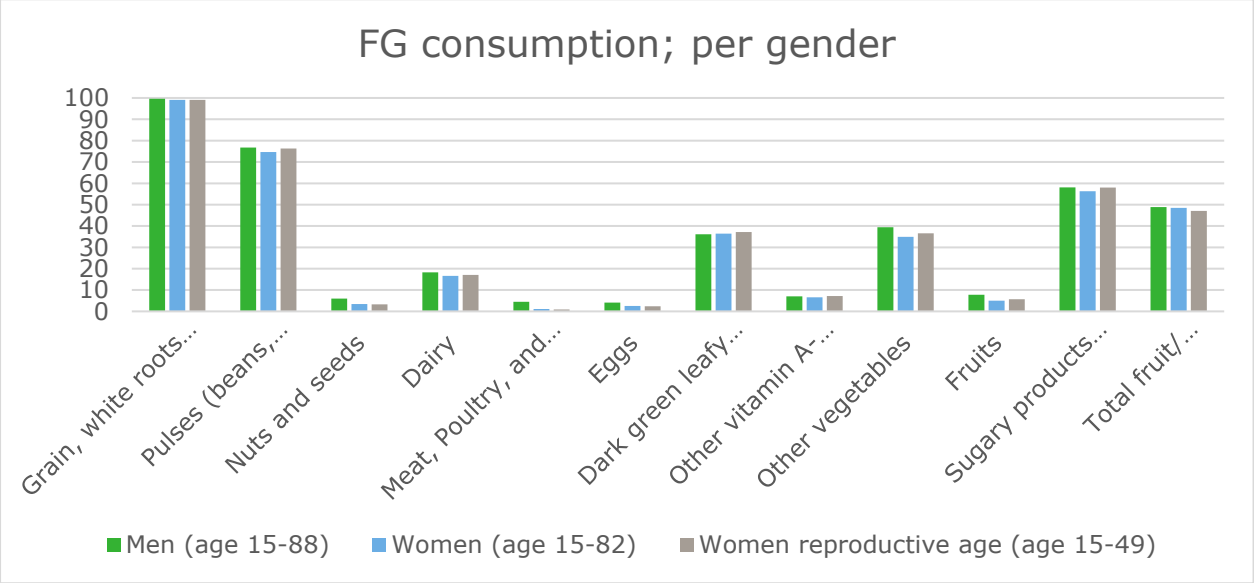

Figure 4 Food group consumption for men, women (all ages) and women of reproductive age separately.

**Note that these food groups are not part of the minimum dietary diversity score for women.*

3.2 Comparison of FBDG, intake data and the perception of a healthy meal

Table 2 below compares the food groups recommended in the FBDG with the percentage of people currently consuming specific food groups in the past 24 hours and people's perceptions of a healthy meal. By combining the consumption data with the perceptions of a healthy meal, it can be hypothesized if and how nutrition education (in line with the FBDG) might influence consumption. This Table tries to estimate if nutrition education, alone, could affect consumption. However, as argued earlier, literature shows that food choices are influenced by a wide range of factors such as physiological, psychological, emotional, environmental, and surrounding factors (Leng et al., 2017). Awareness and knowledge of the positive or negative effects of the consumption of specific food groups, as described in the FBDG, is only one of the factors influencing food choice.

FBDG[1]:	Dietary intake data (from DQQ[2])*	Perceptions of a healthy meal**	Hypothesized ability of nutrition education to change consumption behaviour
Diversify your diet, at least 4 food groups in every meal and 6 food groups every day	Amhara: Average DDS[3] is 2.4 and this was the same for men and women of reproductive age.	Amhara: Between 3 and 5 food groups were mentioned by the focus groups. Most (4 out of 6) described meals contained 4 or more food groups. 3 focus groups mentioned diversity and eating different kinds of foods as an important part of a healthy diet. Other focus groups said switching to eating different types of grains was good because that was perceived as healthier (*teff* was cited as better than maize).	Most people's idea of a healthy meal was in line with the recommendation of 4 food groups per meal. However, on average, people consumed less than 3 food groups during the day. Low diversity in the current consumption is probably due to other factors than that of awareness/knowledge of a healthy diet. Only in previous SNNPRs, awareness on the importance of a diverse diet was lower and nutrition messaging could have a positive effect on changing food consumption.
	Oromia: Average DDS[3] was 3.2. The score was 3.3 for men and 3.1 for women of reproductive age.	Oromia: Almost all focus groups mentioned 4 or 5 food groups in a meal. All groups mentioned cereal, vegetables and animal-sourced foods. Some groups added lentils and/or butter as a 4th and/or 5th food group. Eating different types of food was mentioned by all but 1 focus group as an important part of a healthy diet.	

	Previous SNNPR: Average DDS[3] was 3.1. The score was 3.0 for women of reproductive age and 3.2 for men.	Previous SNNPR: Between 2 and 5 food groups were mentioned in the description of a healthy meal. Only 2 focus groups mentioned 4 or more food groups in a healthy meal. All focus groups mentioned cereals. Eating a diverse diet was not mentioned by any of the focus groups as an important part of a healthy diet.	
80–120 grams of legumes	Amhara: Legumes were consumed by 96% (by 98% of all men and by 93% of women) Oromia: Legumes were consumed by 88% (by 89% of all men and 87% of all women)	Amhara: All focus groups identified legumes as part of a healthy diet. *Shiro* and *kik* were mostly mentioned as healthy dishes. Oromia: 3 out of 6 focus groups mentioned legumes as an important part of a healthy diet. *Shiro*, chickpea and faba bean were mentioned as examples.	In the current diet, legumes are consumed by many people although there are regional differences. Legumes were not mentioned as part of a healthy meal by almost all focus groups. Nutrition education focussing on this food group could be useful**,** especially in Oromia and previous SNNPR and for men. These groups did not always perceive legumes as part of a healthy meal.
	Previous SNNPR: Legumes are consumed by 44% (43% of all men and 44% of all women)	Previous SNNPR: Legumes were mentioned by 4 out of the 6 focus groups as part of a healthy diet. *Wot*, *nefro*, *kike* and haricot beans were mentioned as examples. All women groups and only one men group mentioned pulses as an important part of a healthy diet.	
100–200 grams of various fruits and vegetables of different colours	Amhara: consumption of any fruit or veg: 30%. DGLV: 21%. Other vegetables: 15%. Vit A rich fruit/veg: 2%; and Other fruit: 1%	Amhara: 4 focus groups mentioned vegetables as part of a healthy diet. Examples mentioned were cabbage, cucumber, *mulukiya* or *kudra*. Potato was also considered a vegetable by quite some focus groups. Fruits were mentioned by 2 focus groups whose participants were women	Vegetable consumption and perceptions of their healthiness varied across different regions. Amhara: Vegetables were consumed in very limited groups, and they were mentioned by 4 out of 6 focus groups as healthy. Probably, reasons other than awareness were causing the low consumption. Oromia: Vegetables were consumed by around half of the population and mentioned by all focus groups. Probably, factors other than lack

	Oromia: Consumption of any fruit or veg: 61% DGLV: 17% Other vegetables: 53% Vit A rich fruit/veg: 8% Other fruit: 9% Previous SNNPR: consumption of any fruit or veg: 81% DGLV: 71% Other vegetables: 44% Vit A rich fruit/veg: 10% Other fruit: 9%	Oromia: Vegetables were mentioned by all focus groups as an important part of a healthy diet. Examples mentioned are beetroot, cabbage, carrot, potato, tomato, and sweet potato. Fruits were mentioned by only 2 focus groups in Babile *woreda* as part of a healthy diet. Previous SNNPR: Vegetables, as part of a healthy dish, were mentioned by three focus groups. Mostly Kale was mentioned. Fruit was mentioned by 1 women's focus group. They mentioned avocado, banana or mango.	of awareness were the reasons for all people not to have consumed vegetable**s.** Previous SNNPR: Vegetables were commonly consumed but they were mentioned only by half of the focus groups as components of a healthy meal. Nutrition education could be useful to increase the consumption**.** Fruits were consumed by a very limited number of people in almost all regions, and they were hardly mentioned as part of a healthy diet. Women seem to mention fruits more than men. Nutrition education could be useful but also other constraints for consumption, such as availability/accessibility/affordability are probably limiting consumption.
10–20 grams of nuts and oilseeds	Amhara: consumed by 1%. Oromia: consumed by 13% (by 16% of all men and by 9% of all women) Previous SNNPR: consumed by less than 1%.	None of the focus groups in all regions mentioned nuts or oil seeds.	The consumption of nuts and seeds was very low or almost zero. Also, they were not mentioned as part of a healthy diet by any of the focus groups. Nutrition education could be useful. However, the low consumption could be due to a lack of knowledge or due to other factors such as accessibility or price that would influence the consumption.
animal-sourced foods such as eggs and meat (60	Amhara: Dairy was consumed by 2%; meat, poultry and fish by 0%, and eggs by 0% of the population.	Amhara: Eggs, meat and dairy were mentioned by all groups while fish was mentioned by only one group.	Almost all groups mentioned animal-source products as part of a healthy meal. However, the consumption was much lower with substantial regional differences. So, awareness was probably not the main reason for people's limited consumption of these products.

grams) and dairy foods (300–400 grams)	Oromia: Dairy is consumed by 23% (25% of men and 22% of women). Meat, poultry and fish by 6% and eggs by 7% of the population. Previous SNNPR: Dairy is consumed by 28% (29% of all men and 26% of all women). Meat, poultry and fish by 3% and eggs by 4% of the population.	Oromia: Animal-sourced foods were mentioned by all groups. All mentioned, milk and meat as components of a healthy diet. Eggs were mentioned by only one male focus group. Previous SNNPR: Animal-sourced foods were mentioned by 4 out of 6 focus groups as components of a healthy diet. While 4 groups mentioned dairy, 3 groups mentioned meat and eggs.	Only fish was hardly mentioned as being part of a healthy diet so nutrition education focussing on fish could be useful if fish is available. However, the current consumption is low indicating that current availability might be low.
15–20 grams of fats and oils per day	DQQ does not ask for this.	Amhara: In total, 3 out of 6 focus groups mentioned fats. All 3 mentioned butter and 2 also mentioned oils. Two male and 1 female focus groups mentioned fats Oromia: Butter was mentioned as a component of a healthy diet by 4 out of 6 focus groups. All male groups made mention of butter while only one female group did. Previous SNNPR: Butter was mentioned as a component of a healthy diet by 2 out of 6 focus groups (men and women groups).	The intake of fats was not measured. Fat was mentioned by half of the focus groups and mostly in the form of butter, which is the less healthy source of fat, according to the FBDG. Also, men mentioned butter and other fats more often than women. So, nutrition education could be useful to make consumption behaviour more in line with the FBDG. It should focus on the consumption of vegetable oils and their benefits compared to butter. Furthermore, nutrition education should focus on the consumption of oils by women and the potential health benefits for them.
Limit intake of sugar, sweets and soft drinks to below 30 grams per day	Amhara: 41% of the population consumed sugary products. Oromia: 75% of the population consumed sugary products.	Amhara: 2 out of 6 focus groups (men and women) mentioned honey as a part of a healthy meal. Oromia: 2 out of 6 focus groups (men and women) mentioned honey as a part of a healthy meal.	Almost 50% of the people consumed sugary products (mostly coffee or tea with sugar). However, regional differences were prevalent. Honey and coffee (probably with sugar) were seen as part of a healthy diet by almost half of the focus groups. Although we cannot conclude that the current consumption is above 30 grams, nutrition education on limited sugar intake could be useful to reduce and make sure consumption stays below the recommended intake.

	Previous SNNPR: 30% of the population consumed sugary products.	Previous SNNPR: 3 out of 6 focus groups mentioned coffee as part of a healthy meal (coffee was consumed almost always with sugar).

** Dietary intake data asks for the % of people consuming a specific food group and does not take into account the amount that is consumed.*

*** Focus groups with men and women were asked to draw their ideal healthy meals. It was analyzed how the dishes included the food groups mentioned by the FBDG. The focus groups were asked to draw one meal and not specifically the total consumption during the day. So, this exercise cannot give a conclusion on the amounts consumed and if and how they are in line with the guidelines.*

[1]*Food based dietary guidelines.*
[2]*Diet Quality Questionnaire*
[3]*Dietary diversity score*

4 Discussion

This report gives an overview of the current dietary patterns, and consumer perception of a healthy meal and reflects on the alignment between current dietary practices and knowledge with the recommendations of the FBDG.

Consumption practices: One key limitation of this study is that the dietary intake data did not include the amounts consumed while the dietary advise from the FBDG includes both what as well as how much to consume. Likewise, if a food group is recommended by the guidelines, but consumed by many of people, it is assumed that the intake is not adequate. If the guidelines suggest limited consumption of a food group, for example, sugar, but a substantial part of the population is consuming this food group, it is assumed that the consumption is also not in line with the guidelines. Percentage of people consuming, or not consuming, a food group is used as a proxy indicator to estimate if a food group is consumed often by the majority of the population. While not a perfect indicator, a higher DDS has been shown to correlate with high levels of nutrient adequacy, so this is thought to be a reasonable assumption.

Another critical question to answer is about people's knowledge of a healthy diet. We assume that if people's views on healthy diets will, to some extent, shape their dietary practices, while recognizing that many other factors beyond health also play a role in shaping food choice behaviour. If people recognize a certain food as healthy but do not consume it, consumption is likely limited by factors including costs, availability and convince, and we question if increasing knowledge, alone, will lead to increased consumption of these foods. Consuming a diverse diet (key message 1) and consuming animal-sourced foods (key message 5) were mentioned by the majority of focus groups as important parts of a healthy diet. However, the majority of the population did not implement these practices. This suggests that factors such as availability, affordability, accessibility and convenience are probably more influential for people's dietary choices and behaviour (Turner et al. 2017). It should be noted that dietary intakes were collected during the fasting period of Orthodox Christians, lowering the percentage of people consuming animal-source foods (especially in the Amhara region where all interviewed people were Orthodox Christians) (Seleshe, Jo & Lee, 2014), which will also influence the overall dietary diversity.

The percentage of people consuming pulses (key message 2) in all regions and the percentage of people consuming vegetables (key message 3) in previous SNNPR and Oromia regions was quite high. They were mentioned as part of a healthy diet by some, but not all focus groups. Since many people can consume these foods, but not everyone is aware of their health benefits, nutrition education could have a positive effect on total consumption, especially among men. Another study also showed that there are certain beliefs and views about the consumption of different types of pulses that limit the consumption by men (Kabata et al., 2016) Nutrition education focussing on the consumption of legumes could increase the consumption in this study population especially when the messages are focussed on men. Focus groups in previous SNNPR mentioned vegetables less often than those in Amhara and Oromia. The percentage of people consuming vegetables was also found to be quite high in the previous SNNPR indicating that people can consume vegetables. So, nutrition education focussing on vegetable consumption in the previous SNNPR could be a successful strategy to increase consumption.

The percentage of people consuming fruits (key message 3) in all regions and vegetables in Amhara (key message 3) was found to be quite low. Furthermore, these foods were not fully recognized as part of a healthy diet by the majority of the focus groups. This study cannot give a substantiated hypothesis on factors

attributable to the low consumption. It could be due to a low desirability low availability/affordability/accessibility or a combination of all of the above factors. A study from the International Food Policy Research Institute showed that fruit and vegetables are too expensive for consumers to be able to adhere to the international recommendations for fruit and vegetable consumption (Hirvonen et al., 2018). The study concluded that an average Ethiopian household should spend 11% of their income on fruit and vegetables so that they will be able to consume 2 servings of fruit and 3 servings of vegetables a day. In line with those findings, this study argues that nutrition education focussing on these key messages could be useful to increase awareness of the positive health benefits of these foods. However, nutrition education alone does probably not lead to substantial increases in consumption, with availability and affordability likely major contributing factors to the low consumption levels.

The percentage of people consuming nuts and seeds (key message 4) was also found to be low. Furthermore, nuts and seeds were also hardly mentioned by any of the focus groups as part of a healthy diet. This study cannot provide a definitive answer if the low consumption is attributable to limited awareness of the healthiness of the product or if it is the result of other factors such as low availability/affordability/accessibility. However, a study by Headey et al. (2023) shows that the consumption of nuts and seeds only minimally increases when income increases. Furthermore, the study also shows that the cost of pulses, nuts and seeds is one of the cheapest food groups in rural Ethiopia. So, this could suggest that nutrition education could have a positive effect on the consumption of nuts and seeds.
This study did not collect dietary intake data for the consumption of fats (key message 8). However, fats were rarely mentioned as part of a healthy meal by the focus groups. When fats were mentioned, it was almost always in less desirable form of animal source fats (butter). So, it would be useful for nutrition education to focus on fats and especially on vegetable oils since the FBDG recommends the consumption of vegetable oil above the consumption of butter. Furthermore, nutrition education and messaging should focus on the importance of fats and oils for women since women's focus groups mentioned fat less often as part of a healthy diet.

The (un)healthiness of the consumption of sugar is strongly dependent on the amounts consumed. This study did not measure the amount of sugar consumed. However, it was found that close to half of the population consumed some sugary foods, especially coffee and tea with sugar. Furthermore, honey and coffee with sugar were also mentioned by a third of the focus groups as part of a healthy diet. So, focusing on this recommendation during nutrition education could be useful, especially if the income of the population groups increases, as previous research shows that sugar consumption increases strongly when incomes increase (Gouel & Guimbard, 2019).

5 Conclusion and Recommendation

In this report we sought to demonstrate that lack of awareness is not the only reason for low consumption of nutrient dense foods in rural Ethiopia. Indeed, people are often aware of what is healthy, but are unable to implement these practices for a range of reasons.

Nutrition education can have a positive effect on the adherence to the FBDG for the following messages: limited consumption of sugar; the consumption of legumes when the nutrition education is especially focussed on men; the consumption of vegetables in the previous SNNPR region; and the consumption of vegetable oil for all, but especially for women. Furthermore, nutrition education can also have a positive effect on the consumption of nuts and seeds.

As argued earlier, the low adherence to the recommendation on the consumption of fruits, animal source foods, vegetables (in Oromia and Amhara) and the recommendation of consuming four food groups per meal is probably not caused by limited awareness. Nutrition education alone will have probably limited effect on the behaviour of people, suggesting that strategies which support households with improved access, either through own production or increased household income, combined with nutrition education, are also critical to drive sustainable changes in dietary practices.

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Stichting Wageningen Research Ethiopia

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