

The Israeli Nutrition Plate in 2050

An interim report within Israel 2050 Food Security

Prof. Eyal Shimoni
Sima Tziporfal

We would like to thank our colleagues for their part in deliberations, consultations, and discussions:

Prof. Ofira Ayalon, Dr. Alex Blekhman, Prof. Yakov Ben-Haim, Tamar Dayan, Prof. Revital (Tali) Tal, Dr. Gilead Fortuna, Dr. Anath Flugelman, Dr. Orna Raviv, Rinat Klein, Avida Shoham, Naama Shapira



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Contents

.1	Background	6
1.1	Global Food Security	6
1.2	Food Security in Israel.....	11
1.3	The Food Security Project at Samuel Neaman Institute	14
1.3.1	Project Structure	14
.2	Purpose Statement.....	15
.3	Research Methodology.....	16
3.1	Research Tools.....	16
3.2	Data Sources.....	16
3.3	Research Stages	16
3.4	Work Circles.....	17
.4	Defining the Quantitative Range of Needs.....	18
4.1	Israeli Status Review	18
4.1.1	Demographic Projection.....	18
4.1.2	Food Sources.....	19
5.	Food Consumption Basket.....	20
5.1	Food Consumption in Israel	20
5.2	Recommended Nutrition Plate.....	22
5.2.1	Universal Nutrition Principles.....	22
5.2.2	Cultural and Geographic Contexts.....	24
5.2.3	Choosing the Nutrition Plate Composition	26
5.3	Production and Demand 2050	33
6.	Summary and Interim Conclusions.....	34

List of Figures

Figure 1: Examples of Various Food Security Strategies	11
Figure 2: Dimensions of Food Systems.....	13
Figure 3: Food Security – Issues and Stakeholders	14
Figure 4: Project Structure	15
Figure 5: Israeli Population Prediction by Age Groups.....	18
Figure 6: Ratio of Production and Import out of Available Supply (2021).....	19
Figure 7: Daily Per Capita Consumption.....	20
Figure 8: Net Food out of Available Supply (2021)	21
Figure 9: Production 2021 and Available Supply 2050 (entire Israeli population, tonnes per year)	22
Figure 10: Food Group Recommendations (daily gram per capita).....	28
Figure 11: Food Group Recommendations – Total Daily Calories.....	29
Figure 12: Recommended Nutrition Plate	30
Figure 13: Recommended Daily Supply and Consumption of Vegetable and Animal Protein Per Capita.....	31
Figure 14: Production 2021 and Available Supply 2050 as Required for Nutrition Plate (entire Israeli population, tonnes per year)	33

Abstract

Food Security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life¹.

The Challenge Food Security

Population growth, climate change, geographic limitations, geopolitical crises, reliance on food import, extreme climate events, sustainability, and health.

Food Security at Samuel Neaman Institute

As ensuring food security entails addressing many issues and aspects, the Institute's food-security project promotes a long-term outline with a vision of complete food security for all residents by 2050.

The Project

Defining the nutrition plate, scenarios (2050 demography and climate characteristics) as they effect working scenarios. Deriving national goals, primary actions, and multi-year plans.

How: Goals and Collaborations

Setting supply goals for the food basket. Promoting broad agreement and intersectoral collaboration in shaping the future: research, cross-sectoral teams, interdisciplinary conferences to reflect implications and validate insights.

First Step: Recommended Nutrition Plate

Defining the composition/structure/content of the mediterranean plate, aligning with Israeli culture, preferences, lifestyle, climate and agriculture, while ensuring a sustainable and healthy diet.

Main Insight

Modifying the Israeli diet according to the nutrition plate recommendations will reduce the gaps between current production and projected demand in 2050 across nearly all food groups.

¹ FAO (1996). [World Food Summit](#).

1. Background

Food security is one of humanity's primary challenges in the 21st century, constituting an essential pillar of the stability and prosperity of every country, and of the global population. In Israel, the need for a comprehensive national food-security plan stems from the country's diverse and unique challenges, including population growth and urbanization, increasing demand for food, geographic conditions such as land reserves for agriculture, climate conditions and changes, and available water sources, as well as security crises and geopolitical instability that threaten Israel's economic and social stability. This reality leads to a considerable reliance on international trade and on strong economic relations with geographically distant countries, emphasizing the great importance of air and sea connectivity, much like an island nation. Being an island nation in practice, Israel is significantly dependent on food import from other countries. This makes Israel vulnerable to food price fluctuations, extreme weather conditions, and geopolitical crises at the import countries that affect food supply chains.

Targeting these challenges and implementing solutions to ensure stable and high-quality food supply will ensure that Israel can provide adequate, nutritious, and affordable food for its growing population during the upcoming decades. Thus, food security is of strategic importance to Israel, necessitating the forming of a forward-looking national plan that will ensure optimal food security in Israel 2050.

According to the commonly accepted definition of food security, it exists when "all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life"². So, when addressing food security, we must consider not only sufficient consumption of food, but also the quality of the food consumed³. Defining the contents of the recommended dietary plate for Israelis in 2050 is therefore at the basis of the plan, from which we can derive the types of foods and their quantities. **Discussing the recommended plate is at the center of the current interim report.**

1.1 Global Food Security

In light of the issue's importance, various global organizations and scales address food security, act for its achievement, and provide important insights about the state of food security worldwide. These include:

² FAO (1996). [World Food Summit](#).

³ Leket Israel (2022). [Food waste and rescue in Israel \(EN\)](#).

- **The United Nation’s Food and Agriculture Organization⁴ (FAO)**, a leading authority on global food security, publishing comprehensive annual reports and data about food production, availability, and accessibility. The FAO emphasizes and supports action strategies for eradicating world hunger, and works in collaboration with UN agencies like WFP, UNICEF, IFAD, and WHO. Additionally, the FAO’s definition of food security is the globally accepted definition.
- The Economist Impact’s **Global Food Security Index⁵ (GFSI)** is conducted each year by the Economist Intelligence Unit (EIU), evaluating food security among the world’s nations based on affordability, availability, quality, and safety.
- **The World Food Programme⁶ (WFP)** provides comprehensive data and reports about food security, including emergency food assistance and food security assessments in areas that experience food crises.
- **The World Bank⁷** provides analysis and data about food security, poverty reduction, and agricultural development.
- **The Global Hunger Index (GHI)⁸** monitors hunger at the global, regional, and national levels, emphasizing areas with a severe lack of food security.

A review of data by the WHO and the FAO reveals a troubling picture of current food security, based on the following findings: the number of people affected by hunger before the Covid-19 pandemic (2019) and after (2022) had risen from 8% to about 9.2% of the world population, with about 11% exposed to severe food insecurity⁹. In 2023, 1 in every 11 individuals worldwide faced with hunger¹⁰. Similarly, in 2021-2022 a steady increase (above 3%) in obesity was reported among adults worldwide. In the past two decades (2000-2021) an increase of 54% in the production of primary crops¹¹ and of 53% in the production of meat¹² were recorded, compared to an increase of only about 29% in global population during the same period. Adversely, there was a global reduction in production capacity (-13%) and agricultural land supply (-86 million dunams or about -21 million acres) during these years, as well as an increase in greenhouse gas (GHG) emissions from agricultural food systems (+10%)¹³.

⁴ FAO. <https://www.fao.org/home/en/>

⁵ The Economist Impact. [GFSI](#).

⁶ [World Food Programme](#) (WFP).

⁷ [World Bank Group](#).

⁸ [Global Hunger Index](#).

⁹ World Food and Agriculture – Statistical Yearbook 2023

¹⁰ WHO. (July 2024). Hunger numbers stubbornly high for three consecutive years as global crises deepen: UN report.

¹¹ cereals, sugar, vegetables, fruits, roots, tubers, oil crops, etc. World Food and Agriculture – Statistical Yearbook 2023

¹² Over half of production stems from chicken meat. World Food and Agriculture – Statistical Yearbook 2023

¹³ Our World in Data. Population Growth (Population, 1950 to 2023 Aug. 2024).

However, it is worth noting that the discussion on Israel's food security is multidimensional and pertains to both advantaged and disadvantaged populations – as is common in developed countries.

A review conducted by YS for the Ministry of Agriculture¹⁴ found that of the 35 countries reviewed, 21 countries have published strategic food security plans, with 20 countries having plans that directly address food security, and 10 countries having published governmental goals for domestic food production in the next few years. An in-depth review was conducted of 10 countries with high awareness of national food security, some of which are island economies with limited domestic production while some have a robust agricultural industry. This comparison addressed issues of legislation, the existence of a designated food security authority, food self-sufficiency¹⁵, risk assessment, agricultural sector support, processing of agricultural areas, assurance of production factors, use of agricultural land in foreign countries, promotion of alternative protein sources, and an infrastructure of emergency food warehouses. The findings are as follows:

- In six countries (South Korea, Singapore, Japan, Switzerland, Taiwan, and the UK), food security is defined in law. There is a high correlation between a constitutional definition of food security and between comprehensive strategic plans and robust governmental activity pertaining to food security.

A recent study¹⁶ found that most countries do not have legislation for reducing food insecurity, and that most countries, especially in Europe, rely on non-governmental organizations (NGOs) to provide food assistance for various populations.

- Seven countries (South Korea, Singapore, Japan, Switzerland, Taiwan, United Arab Emirates, and Turkey) have a dedicated food-security authority – its success mainly depends on the budget allocated for it.
- All ten countries measure their self-sufficiency level, but some consider it not as a primary object but as an important criterion.

Most primary crops are produced in a limited number of countries. For example, Brazil produces 38% of the global sugar cane supply, the US produces 32% of the global maize production, and China is responsible for about 25% of the global output of rice and

¹⁴ YS. Consulting, Innovations and Ventures Ltd. (October 2022). International Review of Governmental Plans and Actions for National Food Security. Phase B: In-Depth Reviews of the Ten Selected Countries. Ministry of Agriculture.

¹⁵ Self Sufficiency Ratio – a key ratio that describes a country's capability to domestically provide food consumption demand. Self Sufficiency Ratio = production / (production+import-export). From: YS. Consulting, Innovations and Ventures Ltd. (October 2022). International Review of Governmental Plans and Actions for National Food Security. Phase B: In-Depth Reviews of the Ten Selected Countries. Ministry of Agriculture.

¹⁶ Zohar Or Sharvit (2024). [Food Insecurity in Developed Countries Around the World – Characteristics, Responses and Challenges: An International Review](#). Myers JDC Brookdale Institute.

potatoes, and for 18% of the global output of wheat¹⁷. Examining the feasibility of domestic Israeli production and of import¹⁸, we see that in two products (almonds and potatoes), the climate resilience of the countries from which we import and of the other world exporters is higher than that of Israel, and it is therefore feasible to import these products. Pertaining to wheat, the import countries' climate resilience is lower than Israel's, but the average of all wheat exporters is higher than Israel's. The recommendation is therefore to diversify import sources, and to import mostly from countries with good climate stability. For other products (maize, soy, hummus, sesame, grapes, tomatoes, oranges, bananas, watermelon), domestic production was found to be feasible.

- All ten countries conduct research and monitoring to assess risks for production, trade, and food supply chains.
- All ten countries support domestic agricultural production. There is a trend of increased support for farmers who act to streamline and reduce environmental impacts.
- Seven countries (South Korea, Singapore, Taiwan, Ireland, the UK, Turkey, and Japan) provide incentives for expanding agricultural land and for producing certain crops.
- All ten countries act to guarantee production factors such as expanding economic areas, training personnel, and providing water infrastructures.
- Five countries (South Korea, Singapore, UAE, Turkey, and Bahrain) act to purchase or lease agricultural areas beyond their borders.
- Four countries (South Korea, Singapore, the UK, and UAE) act to promote alternative protein sources as a solution for the problems threatening food security.
- All ten countries have emergency food warehouses, which is an important infrastructure for countries that rely on import.

According to the WFP¹⁹, food security plans usually include the following components:

- Strengthening agricultural production
- Improving access to food
- Improving nutrition by providing health education
- Establishing resilience in emergencies
- Adapting to climate changes and promoting a governmental policy

Therefore, a food security strategy requires deliberation about domestic production (current and future crops), import (what to import and from where), emergency warehouses (what to

¹⁷ World Food and Agriculture – Statistical Yearbook 2023

¹⁸ Liron Amdur (September 2022). [The Climate Crisis and Our Plate. Yesodot Center for Public Policy and Practical Zionism.](#)

¹⁹ [World Food Program](#) Country strategic planning.

store and where, who is in charge, action ranges), and monitoring of various factors (prices, geopolitical events, natural damages, etc.) and of scenarios (climate changes, changes in export structures, etc.) as a basis for decision making.

To illustrate, we will mention various strategies for coping with food security (Figure 1). The examples we chose illustrate how small or isolated countries with limited agricultural area/domestic agricultural production manage the challenges of domestic food production and dependency on import, providing pertinent comparisons to Israel:

- All countries have detailed food security plans.
- Japan and Ireland are island nations, while South Korea, much like Israel, has the characteristics of an island nation (challenging political environment with neighbors like North Korea, limiting its connection with other land masses).
- These countries have limited agricultural areas and a high dependency on imported food. South Korea has to import a substantial portion of its food supply due to limited agricultural areas and limiting climate conditions; Japan is an island country with mountainous terrain, which manufactures basic food but relies heavily on import; Ireland focuses on specific agricultural production, mainly livestock, and is dependent on the European Union's common market to supplement its food consumption.
- Each country provides an example of different levels of government involvement in food security matters. South Korea has robust legislation for any activity related to agriculture and food; Japan has a single food security law that only specifies that the government is responsible for the issue. However, the country complements its activity with other programs that are not enshrined in law; Ireland has no legislation or official government activity on food security, yet it has extensive activity including a strategic plan.

Worldwide awareness of food security is rising, yet the issue still needs to be promoted by legislation.

Figure 1: Examples of Various Food Security Strategies



Source: processing by Samuel Neaman Institute of data by YS Consulting, Innovations and Ventures Ltd (2022). For the Ministry of Agriculture and Rural Development, Research, Economy and Strategy Division. (2022). [International Review of Governmental Plans and Actions for National Food Security](#) – Japan²⁰; Ireland²¹; South Korea²².

1.2 Food Security in Israel

At the start of 2024, Israel's population surpassed 9 million residents²³, and it is forecasted to increase to 13.8-17.6 million by 2050²⁴. Expenditure on food consumption was about 18% of the average consumption basket of Israeli households, and about 22% of the consumption basket of households in the bottom two deciles (2020)²⁵. The rate of families that experienced food insecurity was 16.2% (21.1% for children), while the rate of families that experienced severe food insecurity (hunger) was 8.2% (2021)²⁶. This data, in addition to Israel's high poverty level as compared to OECD countries²⁷ and its descent in the Global Food Security Index (from 12th

²⁰ Japanese Ministry of Agriculture, Forestry and Fisheries – [MIDORI Strategy for Sustainable Food Systems](#); Japan Crop Protection Association – [Japan's Sustainable Food Systems Strategy \(MeaDRI\)](#); JAPANGov – Transforming Food Systems for a Sustainable Planet and People [Annual Report on Food, Agriculture and Rural Areas in Japan FY 2022: Leave No One Behind](#).

²¹ [Agriculture and Food Development Authority](#) (Teagasc); [Report of Food Vision 2030](#), Department of Agriculture, Food and the Marine

²² [APTERR](#) – Asean Plus Three Emergency Rice Reserve; [The Korea Economic Institute of America \(KEI\)](#); [Ministry of food and drug service](#); [KREI-Korean rural economic institute](#).

²³ Israel Central Bureau of Statistics (CBS; 2023). [Israel's population at the start of 2024](#). Press release, 28 December 2023.

²⁴ CBS Chart 2.10: [Israel population forecast \(1\) for 2025-2065](#)

²⁵ Leket Israel (2022). [Food waste and rescue in Israel \(EN\)](#).

²⁶ National Insurance Institute. [Food Security Survey 2021](#).

²⁷ OECD, [Poverty rate](#), 2022.

place in 2021 to 24th in 2024²⁸), indicate a deterioration of food insecurity in Israel that must be addressed²⁹.

Currently, with the country in the midst of the Swords of Iron War, Israel is experiencing a significant increase in food prices and an adverse impact on food sources stemming from a temporary reduction in land for food production (agriculture in the Gaza Envelope and the Western Negev, and agriculture in the north), and in available workforce for agricultural work, in addition to climate changes and global impacts on food sources. Israel is at a critical point in which it must consider and examine a national plan to generate food security for its residents in the short and long terms. Such a plan requires a shift in its perception of food security and of the steps that must be taken to gain resilience in the face of uncertainty, while providing a response to one of the greatest challenges – generating food security and feeding the residents of Israel with an eye to health, environment, and sustainability.

Many Israeli organizations address various aspects of food security, yet unlike most OECD countries, there is no systematic national plan. Lacking such a plan, there is currently no comprehensive and coherent outline from which short-term, medium-term, and long-term strategy and actions can be derived. Nonetheless, the government recently began taking action and formulating a long-term national food security plan³⁰. It also changed the name of the Ministry of Agriculture, which is responsible for food security, to the Ministry of Agriculture and Food Security, and established the Food Security Administration.

To examine the food security issue, we must address the risks Israel is facing in this regard. Short-term risks stem from the Swords of Iron War but also from extreme climate events; in the medium-term, threats to food security stem from regional and global geopolitical events as well as from extreme climate events; in the long-term, the future global balance of power and continued climate changes will pose challenges for all world countries, will dictate food sources and types, and may endanger national food security. In Israel, all of the above will exist alongside significant demographic growth. Therefore, while taking action to ensure food security by 2050, specific attention is required to each food source at each of the time ranges.

Responding to these risks requires attention to many and various aspects of our food systems, and a reevaluation of Israel's food-source stability, nationally and globally (Figure 2)³¹. For this purpose, a long-term national plan should encompass all the various components required to achieve this objective, such as production and import quantities of food and raw materials for food production, assurance of supply chains, management of international connections and

²⁸ Economist Impact. [Global Food Security Index 2022](#).

Economist Impact. [Global Food Security Index 2021](#).

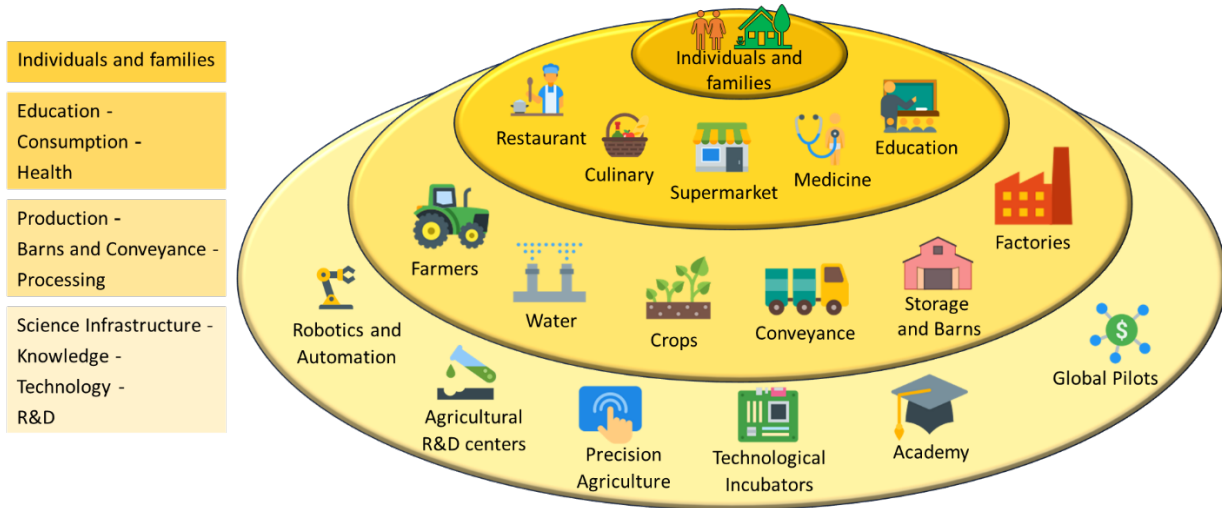
²⁹ Leket Israel (2022). [Food waste and rescue in Israel \(EN\)](#).

³⁰ Ministry of Agriculture and Food Security, [Press release](#), published 03/19/2024

³¹ Liron Amdur (July, 2020). [National Food Security in Israel. Principles and basic considerations for strategic policy and the role of Israeli agriculture](#). Yesodot Center.

relations, innovative industry and technology for food production and handling, support for production factors (natural resources, farmers, industry and technology), education and health, etc.

Figure 2: Dimensions of Food Systems



Source: processing by Samuel Neaman Institute

Israel has many capabilities that allow it to rise to the challenges and realize the objective of food security for its citizens. Examples include: water management – Israel is a global leader in water management technologies, including desalination, drip irrigation, and water recycling (by treating wastewater), which contribute to maximizing water efficiency in agriculture; Agricultural technology (AgriTech) – Israel boasts a highly-developed AgriTech industry focused on agricultural innovation, such as precision agriculture, biotechnology and sustainable agriculture methods like technologies for improving soil health, pest management, and crop optimization; Research and development pertaining to agriculture and food security. Israel is highly experienced in adapting its agriculture to an arid and semi-arid climate, using technology to mitigate the effects of climate change on food production.

A resolution proposal submitted to the government to establish a national food security plan (not yet approved) addresses these issues and specifies that its objective is “ensuring the local food production capability and the regular supply of healthy and affordable food in the medium- and long-terms, in the quantity, quality, variety, and physical and financial accessibility that will allow a healthy lifestyle for the entire Israeli population, while promoting agriculture, local food industries, and sustainable and climate-adapted food systems”³². It is important to note that addressing this issue means tackling both food security and healthy eating habits, so that all Israeli residents can eat healthy and nutritious food that is suitable to their needs³³.

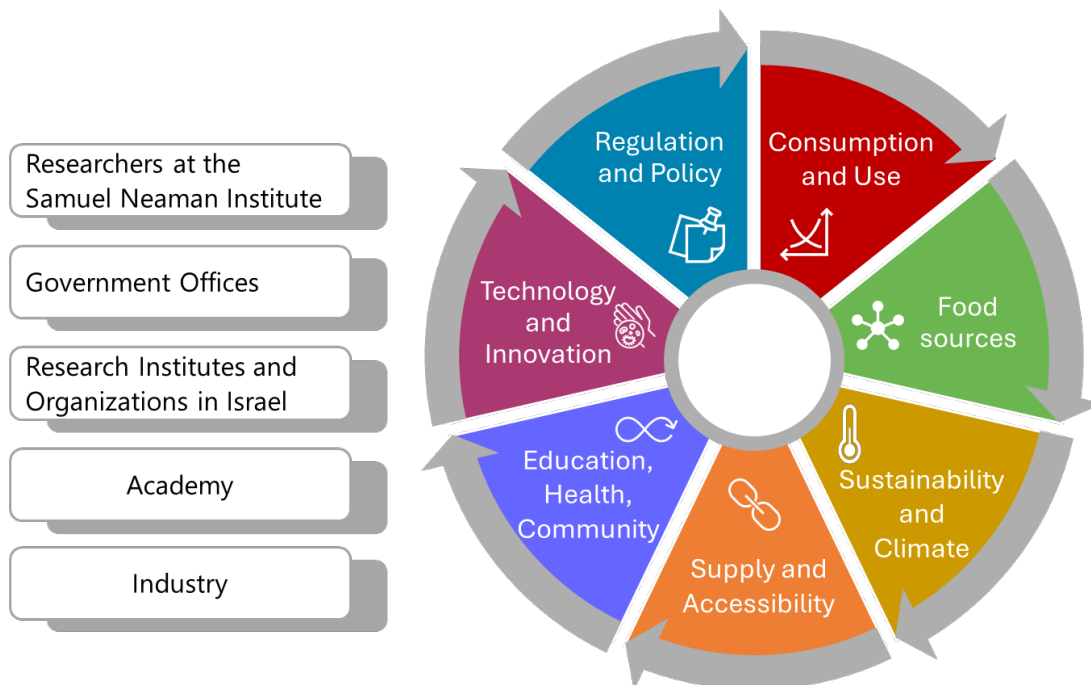
³² Ministry of Agriculture and Food Security, [Press release](#), published 03/19/2024

³³ Dorit Adler, Sigal Tepper and Asaf Tzachor (2021). [Food Security and National Resilience in an Age of Climate Changes](#). INSS.

1.3 The Food Security Project at Samuel Neaman Institute

In light of the importance and urgency of food security in Israel and the need for a national plan, the Samuel Neaman Institute formed a food-security project with a **vision of achieving complete food security for the residents of Israel by 2050**. Ensuring food security entails addressing a variety of issues and aspects, such as examining food sources, climate issues, environment and sustainability, community education and health, supply chains, regulation, and technological innovation (Figure 3). This requires collaboration with researchers of various specialities within the Samuel Neaman Institute, as well as with other organizations and institutes like relevant research institutes, organizations, industry, academia, and government ministries.

Figure 3: Food Security – Issues and Stakeholders



Source: processing by Samuel Neaman Institute

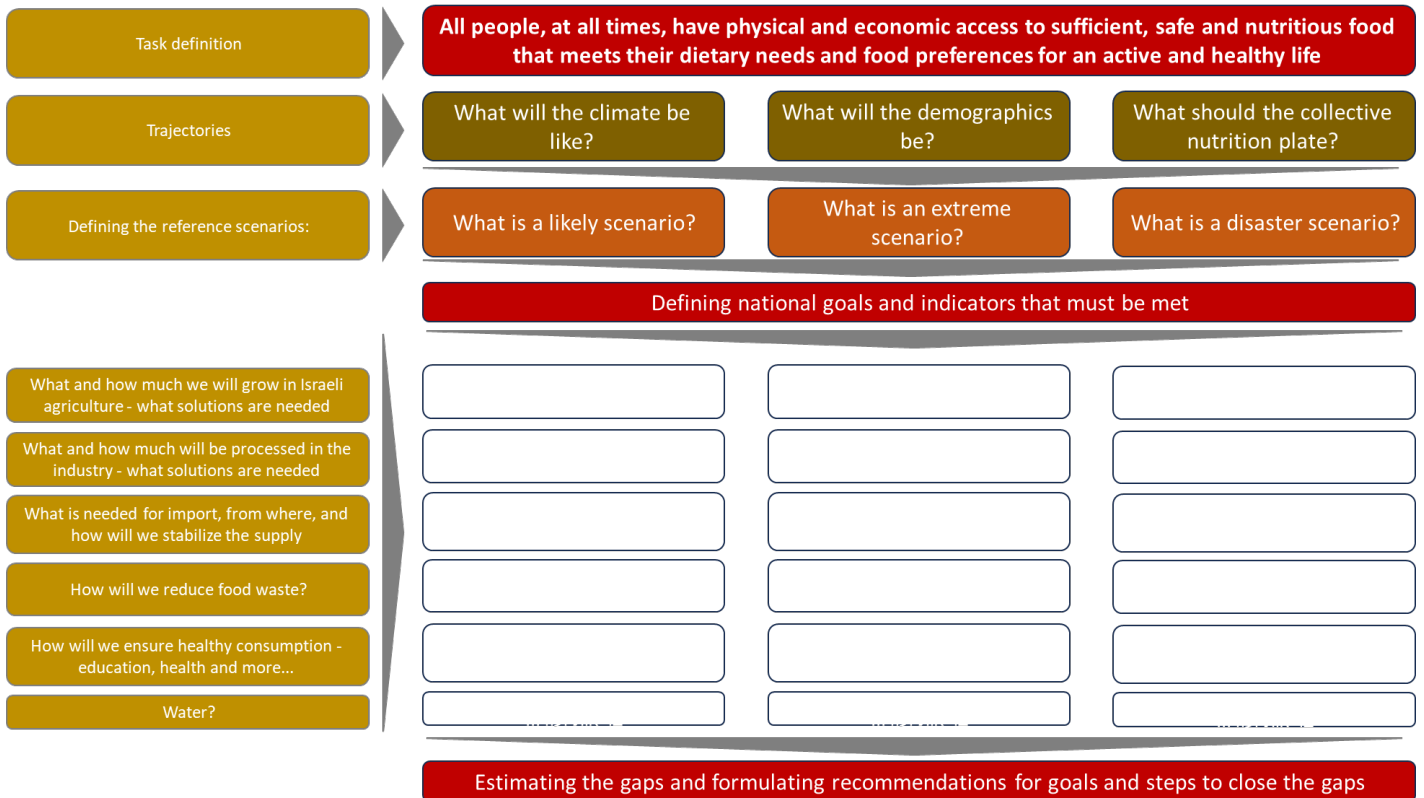
1.3.1 Project Structure

The parameters defined at the base of the project are as follows: the task, the composition/content of the nutritional plate, the demography and climate characteristics in 2050 and their impact on working scenarios. These scenarios will be used to derive national goals and emergency goals. Quantitative goals must be determined for each scenario, as to the quantity and quality of the supply required for the Israeli food basket. There is also a set of questions that require answers, such as: what needs to be produced? What needs to be industrially processed and produced in Israel? How do we adapt production? What needs to be imported (raw materials/products)? How do we adapt domestic crops, and which ones? From

where do we import, and how do we ensure continuity of supply? How do we minimize food loss? How do we ensure healthy consumption (education, health)? What are the required water sources and their quality?

Considering all the possible scenarios in light of these questions will hone our understanding of the gaps, actions, and goal recommendations, to minimize the gaps in various scenarios and to establish policy recommendations (Figure 4).

Figure 4: Project Structure



Source: processing by Samuel Neaman Institute

2. Purpose Statement

The purpose of this study is to establish a data-based proposal for a national food-security policy that can serve as a basis for government resolutions, legislation, and long-term policy with a view towards Israel 2050.

This includes:

1. Establishing a 2050 national food-security vision
2. Proposing practical and achievable strategic outlines for vision implementation
3. Proposing primary and practical anchor actions for implementing the strategic plan

3. Research Methodology

3.1 Research Tools

The research will incorporate several tools:

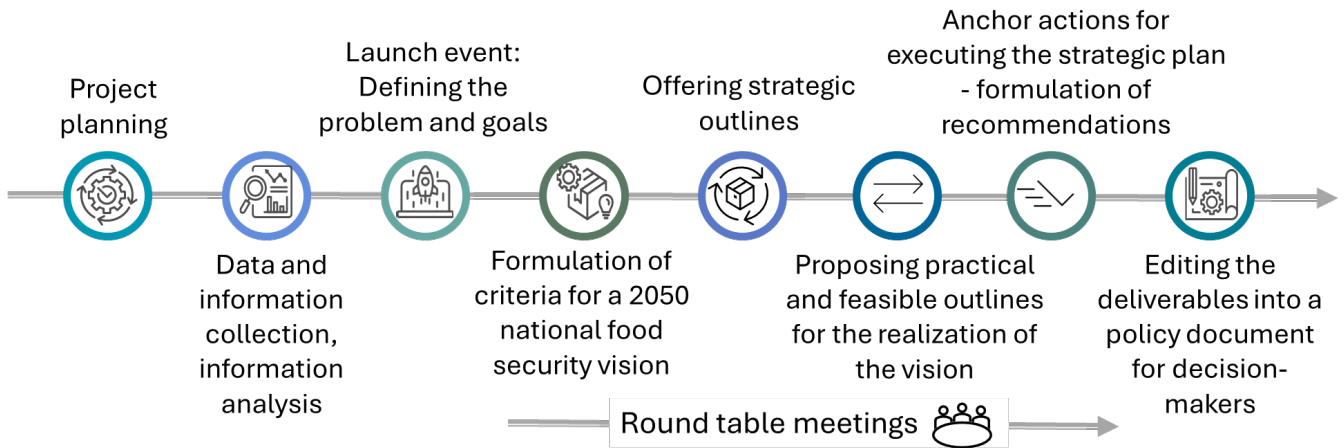
- **Literature reviews** from open information sources.
- **Inquiry and data presentation** about policies, goals, plans, parameters, and implementation of food security plans in Israel and around the world. Data will be collected from open sources as well as from various relevant organizations.
- **Conferences and forums intended to create exhaustive, integrative, and professional “round tables”** while harnessing maximum support and involvement by all stakeholders (government, business sector, third sector, academia and research institutes, civil society).
- **Topical work groups:** out of this forum, heterogeneous work groups on core issues will be established. The work groups will formulate their position and recommendations on their core issue, which will be presented and discussed from time to time in the wider forum.

3.2 Data Sources

Research data was derived from Israel Central Bureau of Statistics (CBS), the Ministry of Health, the Ministry of Agriculture, and other organizations. The researchers have also identified publications, reports and position papers from various sources, such as research institutes, the Knesset’s Research and Information Center, the National Insurance Institute, government ministries, and other organizations. In addition, data and information were collected from international organizations, such as the World Bank, OECD, Economist Impact, FAO and others.

3.3 Research Stages

The Samuel Neaman Institute team composed the insights, recommendations, and plans into a long-term policy paper, which will be submitted to decision makers in collaboration with other organizations, in the following work stages:



3.4 Work Circles

We believe in promoting wide-spread agreement and intersectoral collaboration in shaping the future. Therefore, an integral part of this work will include:

- Collaborations with discipline leaders from various research institutes
- Work in cross-sectoral teams
- Interdisciplinary meetings to reflect cross-discipline implications and validate insights via workshops, seminars, and conferences

This report focuses on the composition of the nutrition plate and food sources in Israel and presents conclusions and insights for continued work.

4. Defining the Quantitative Range of Needs

Adopting a sustainable and healthy diet, in combination with efficient consumption methods including reducing food waste and loss (at the supply, producer, and consumer levels), can significantly impact food sources, food availability, and food accessibility. This chapter will examine the quantitative range of needs in 2050.

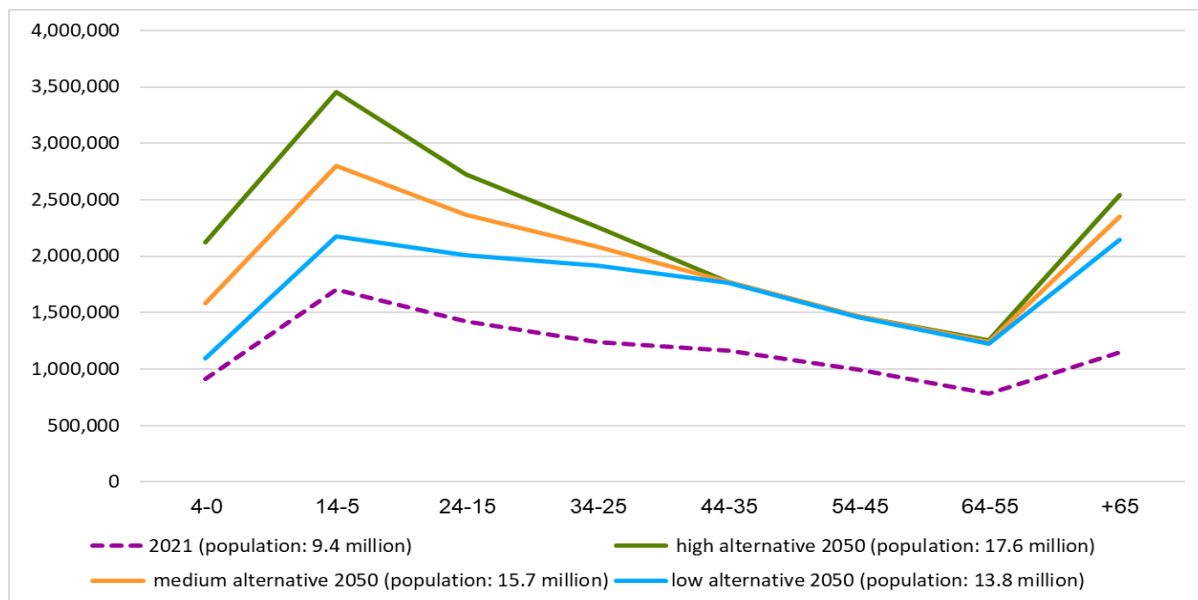
4.1 Israeli Status Review

Our status review consists of presenting the Israeli population’s demographic data in the years 2021 and 2050, and data about food production, required available supply, and net food required in relation to population growth.

4.1.1 Demographic Projection

CBS data³⁴ predict the growth of Israeli population in three alternatives: high alternative (a population increase of about 87%), medium alternative (a population increase of about 67%), and a low alternative (a population increase of about 47%) (Figure 5). According to prediction, the increase retains the same proportions among the various age groups.

Figure 5: Israeli Population Prediction by Age Groups



Processing of CBS data by Samuel Neaman Institute: Chart 2.10 Israel population forecast (1) for 2025-2065, by population group, sex and age, published 12/09/2023; Chart 2.3 Population, by population group, religion, sex, and age – 2021 average. Published 15/09/2022.

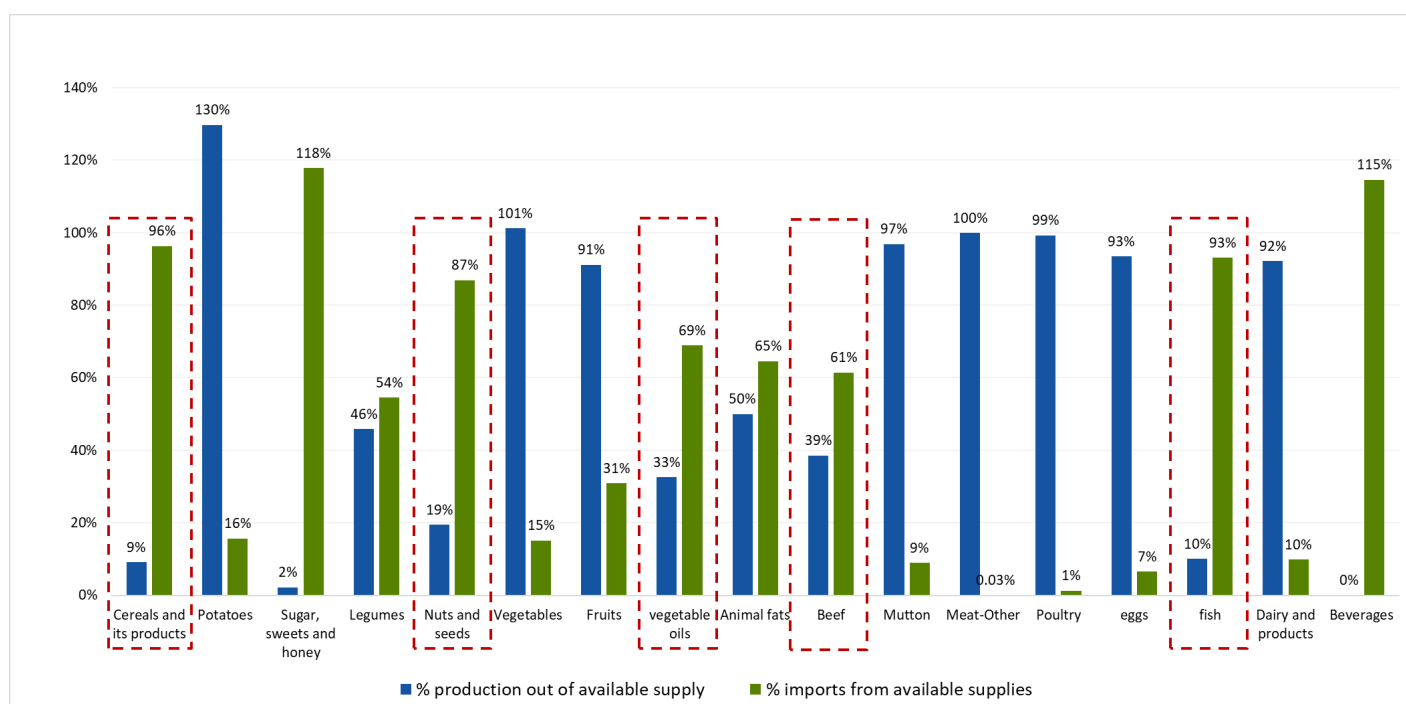
³⁴ CBS. Chart 2.10 Israel population forecast for 2025-2065, by population group, sex and age, published 09/12/2023. CBS. Chart 2.3 Population, by population group, religion, sex, and age – 2021 average, published 09/15/2022.

4.1.2 Food Sources

2021 data indicates that Israel's Self Sufficiency Ratio³⁵ (SSR-the rate of domestic production out of available supply³⁶) is low in food groups such as cereals, nuts and seeds, vegetable oils, beef and fish, which means that its Import Dependency Ratio³⁷ (IDR-rate of import out of available supply) is high in these food groups (Figure 6). Therefore, **there are immediate risks to the future available supply of these food groups in Israel.**

However, Israel's SSR is high in the production of chicken and turkey, including eggs, and in the production of dairy products. Its SSR is also high in the production of vegetables (including potatoes) and fruit.

Figure 6: Ratio of Production and Import out of Available Supply (2021)



Processing by Samuel Neaman Institute of CBS data, Chart 21.20 Food Supply Balance 2021, published 29/08/2023.

³⁵ Self Sufficiency Ratio (SSR) – pertains to the percentage of domestic production out of available supply. From: Israeli Ministry of Environmental Protection (2023). [Summary report: committee for implementing preparation of food systems to climate change for 2030](#). Publication date 09/21/2023; Updated on 09/24/2023. Retrieved 03/04/2024.

³⁶ Available supply includes other uses and depreciation, meaning use for the production of another consumer good item that is included in the balance (animal feed, seeds for planting, and industry uses)

³⁷ The Import Dependency Ratio (IDR) provides information about the rate of Israel's dependency on food importation. From: [Food Supply Balance 2020, February 2022](#). Retrieved 03/04/2024. When the IDR is higher than 100%, it means that export is dependent on import. Meaning, the export of a product produced in Israel is dependent on imported raw material. For example, the export of products that require raw sugar, which is an imported product.

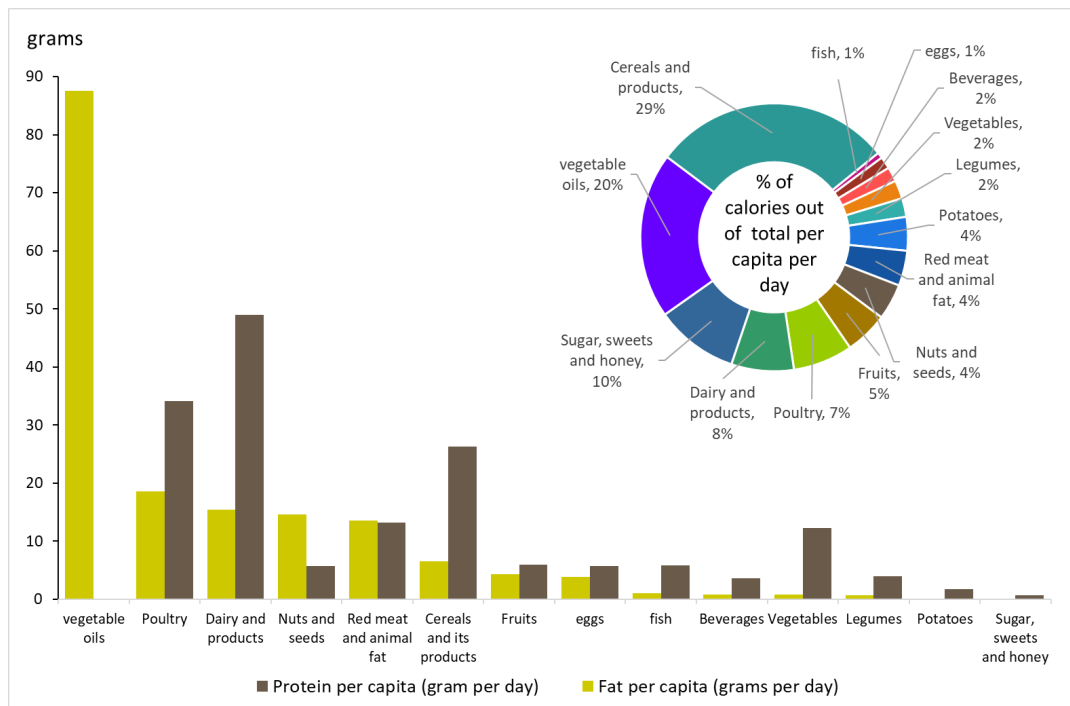
5. Food Consumption Basket

Having evaluated demographic growth rates approaching 2050 and having assessed the main gaps in raw material import for humans and animals, we are now required to estimate the future food consumption basket, and the quantities of raw materials required for it. The purpose of this chapter is to analyze the Israeli population's consumption basket in relation to the recommended nutrition plate and to demographic and health dimensions.

5.1 Food Consumption in Israel

The total per capita calorie availability in Israel is 3,862 kcals per day³⁸. Over a quarter (29%) of the daily calorie intake comes from consumption of cereals and their products, and a fifth (20%) comes from consumption of vegetable fats. Over a quarter (29%) of total per capita protein consumption comes from dairy and its products, while one-fifth (20%) comes from chicken and turkey (Figure 7).

Figure 7: Daily Per Capita Consumption



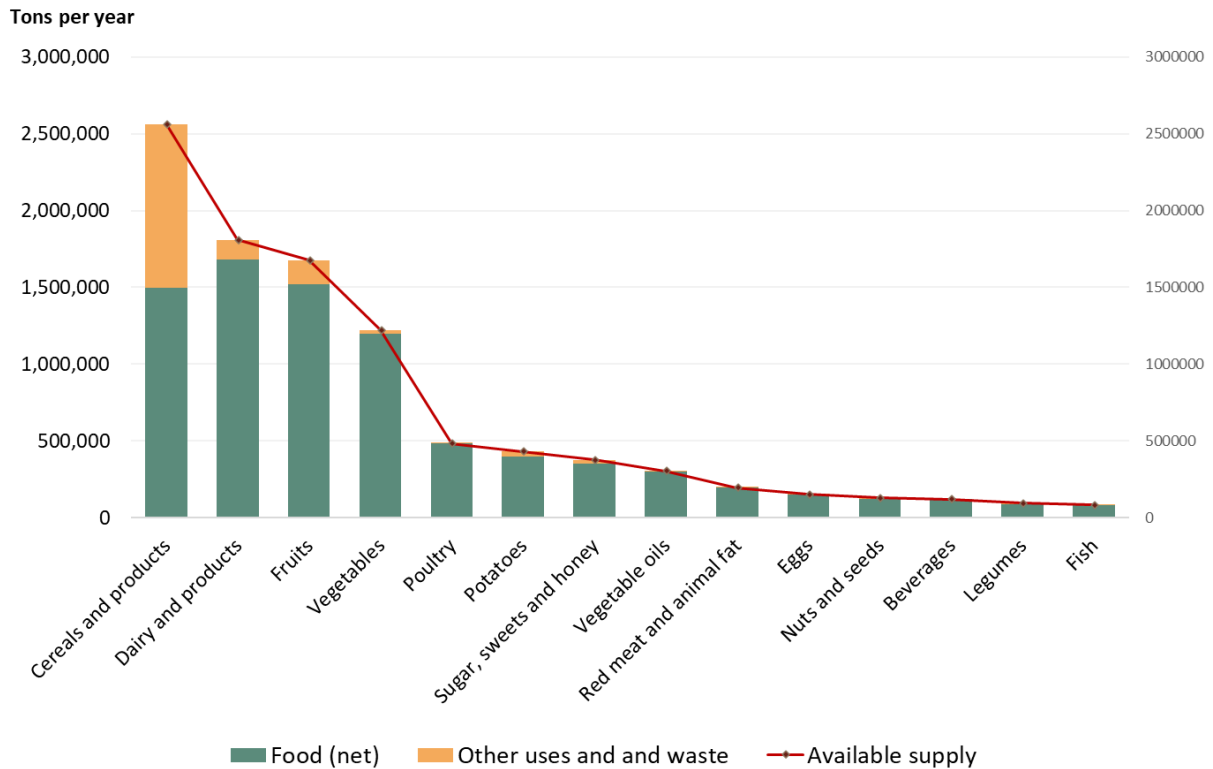
Source: processing by Samuel Neaman Institute of CBS data, Chart 21.20 Food Supply Balance 2021, published 29/08/2023. FAO³⁹ (2019). FAO/INFOODS Food Composition Table 04_NV_stat_39. The required protein quantity was calculated based on the FAO's food consumption table and was adapted to the net quantities in the food groups specified by the CBS.

³⁸ CBS. Food Supply Balance 2021. Chart 21.20 (Israel Annual Statistics, 2023) published 08/29/2023.

³⁹ FAO data was processed as follows: fats were separated into animal fats and vegetable fats. Meat and poultry were separated into red meat and poultry (protein sources such as crickets, caterpillars, ants, camel, alligator, worms, snails, termites, etc. were removed from the list); red meat also includes animal fats, the vegetable group also includes starchy vegetables excluding potatoes.

The greatest gap between available supply and net food is manifested in the cereals group; about 40% of the available supply⁴⁰ of cereal is intended for other uses (animal feed, seeds for planting, and industry uses) or depreciation (Figure 8). In this context it is important to note that as it pertains to animal protein sources (chicken, meat, dairy, etc.), Israel's self sufficiency is false independence as Israel relies on import of raw materials to feed its animals.

Figure 8: Net Food out of Available Supply (2021)



Source: processing by Samuel Neaman Institute of CBS data, Chart 21.20 Food Supply Balance 2021, published 29/08/2023.

* Net food + other uses and depreciation = available supply

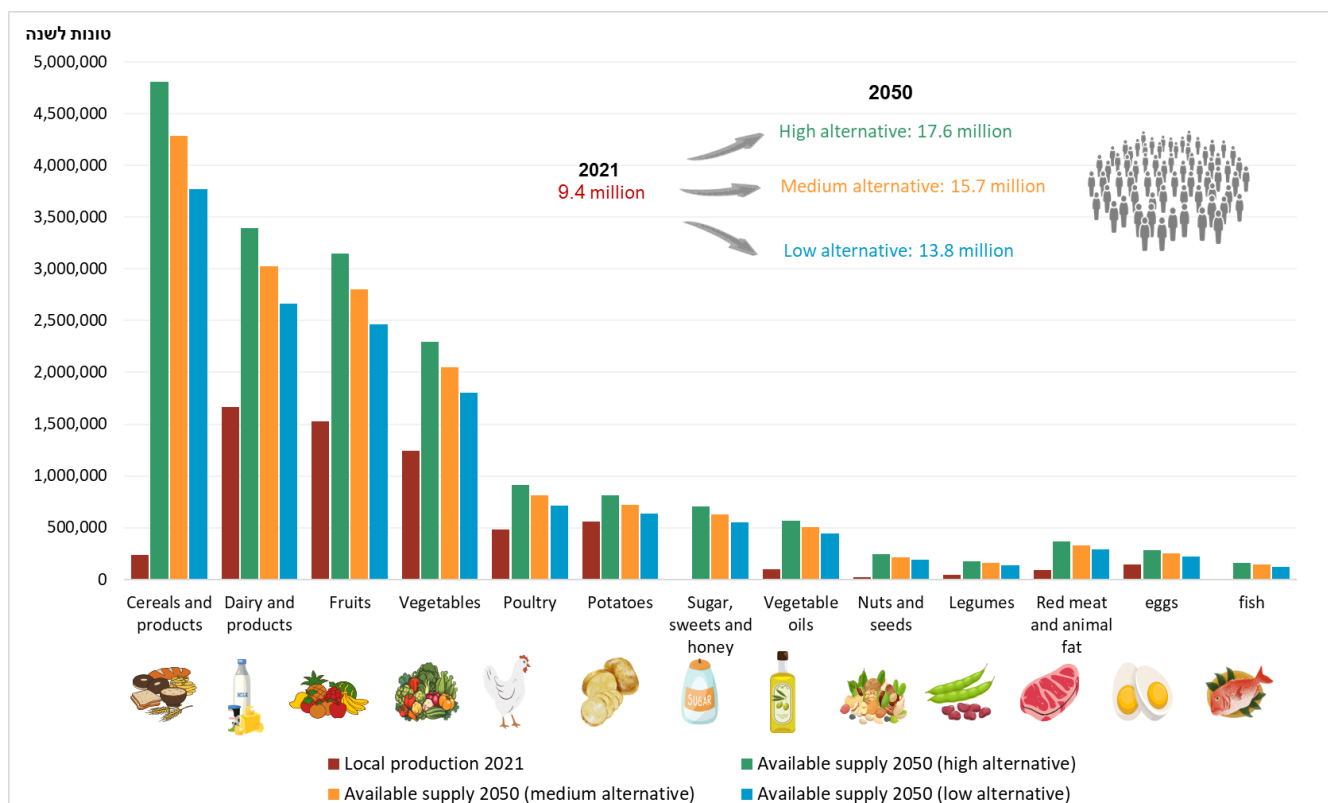
The first and primary condition for food security is regular supply of food⁴¹. If in 2021 9.6 million tonnes of available food supply were required annually⁴², in 2050, according to the population growth prediction, the required food supply will be 14.2-18.1 million tonnes per year for the entire population, an increase of 45%-85% annually (Figure 9). Whether the low or high growth forecast is realized, Israel must prepare for a much higher supply than the current one.

⁴⁰ Available supply includes other uses and depreciation, meaning use for the production of another consumer good item that is included in the balance (animal feed, seeds for planting, and industry uses)

⁴¹ Dorit Adler, Sigal Tepper and Asaf Tzachor (2021). [Food Security and National Resilience in an Age of Climate Changes](#). INSS.

⁴² CBS. Chart 21.20 Food Supply Balance 2021. Published 08/29/2023.

Figure 9: Production 2021 and Available Supply 2050 (entire Israeli population, tonnes per year)



Processing of CBS data by Samuel Neaman Institute: Chart 2.10 Israel population forecast (1) for 2025-2065, by population group, sex and age, published 12/09/2023; Chart 2.3 Population, by population group, religion, sex, and age – 2021 average. Published 15/12/2022; Chart 21.20 Food Supply Balance 2021, published 08/29/2023.

* Available supply includes other uses and depreciation, meaning use for the production of another consumer good item that is included in the balance (animal feed, seeds for planting, and industry uses)

5.2 Recommended Nutrition Plate

5.2.1 Universal Nutrition Principles

Many countries around the world publish nutrition guidelines or recommendations for a healthy diet. These recommendations are usually drafted by government ministries, government agencies or health organizations, and their purpose is to promote healthy eating habits among the local population, and to prevent diseases that stem from malnutrition by publishing healthy diet guidelines and educating for a healthy lifestyle in the community and the education system^{43,44}. Mostly, such guidelines are based on the recommended daily calorie intake or the recommended consumption of each food group, and sometimes even include food compositions (vitamins, minerals, etc.). They sometimes also include specific recommendations for age groups and gender, and for different activity levels. The common threads among these recommendations are a diverse diet based on vegetables, fruits, whole grains, diverse protein

⁴³ NIH. Alberta Project Promoting active Living and healthy Eating (APPLE Schools) - Program Materials

⁴⁴ OECD. 2022. Healthy Eating and Active Lifestyles

sources (fish, legumes, nuts, and moderate consumption of animal products), healthy fats, and avoidance of high-fat, high-sugar, and high-sodium foods. These principles reflect a common approach for the purpose of improving general health, preventing chronic illnesses, and promoting the environment and sustainability by making wise dietary choices.

Recommended nutrition formats in various countries address the issue of education and public promotion in a variety of manners, in accordance with local culture, health policy, and the existing information dissemination systems. One way to present nutrition recommendations is using visual graphics, with the most common graphics being nutrition plates, food pyramids, and graphic symbols. A wise choice of graphic nutrition-recommendation presentation is essential for communicating clear, accessible, and population-appropriate information. In choosing the graphic presentation with which to illustrate the nutrition recommendations herein, we have considered several parameters: simple and intuitive graphic presentation that is suitable for local culture and customs, and visual shapes or symbols that can help people easily identify the important nutritional groups and the recommended quantities, to ensure wide-spread understanding and efficient use of the information.

Out of various visual presentations used in different countries, we have chosen the nutrition plate to illustrate the recommended nutritional composition. The choice was made for the following reasons⁴⁵:

- ▶ The plate visual is simple and easy to understand even for people without a background in nutrition. It provides a clear and practical framework for creating healthy meals, without requiring calculations of calories or food quantities.
- ▶ The plate focuses on controlling food proportions, meaning that the size of each section of the plate suggests the appropriate dish size for each food group. This type of visual presentation may be beneficial for people who struggle with controlling the size of their portions, for example.
- ▶ The plate promotes balance and diversification of food groups, and thus helps ensure the intake of various nutritious substances the body required to function properly.
- ▶ The plate allows flexibility and adaptation to personal needs. People can choose from a variety of foods within each food group, to create meals suitable for their preferences and cultural background.

⁴⁵ <https://www.myplate.gov/>

<https://www.nhs.uk/live-well/eat-well/food-guidelines-and-food-labels/the-eatwell-guide/>

<https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate-vs-usda-myplate/>

5.2.2 Cultural and Geographic Contexts

To construct the recommended nutrition plate, we have examined several nutrition recommendations in various countries and organizations. Examples:

- **Israel – the Ministry of Health’s Nutritional Food Rainbow**

In June 2020, the Ministry of Health published its new nutrition recommendations⁴⁶ for the Israeli public, the main recommendation being adhering to a mediterranean diet. Beyond the health aspect, a mediterranean diet has environmental, economical, and socio-cultural advantages, as well as advantages in coping with epidemics and climate crises⁴⁷. The new recommendations are visualized as a “nutritional food rainbow”. Unlike the food pyramid, the new nutritional food rainbow considers foods according to their level of processing (and not according to ingredients)⁴⁸ and is built as a graphic visualization of the nutrition recommendations. The different rainbows (in different colors) reflect the recommended consumption frequency according to the following principles:



- Green rainbow – vegetables, fruits, and whole grains: diversify daily
- Yellow rainbow – olive/canola oil, tahini, nuts, legumes, milk, dairy products and alternatives: at least once a day
- Orange rainbow – chicken, turkey, fish, and eggs: diversify weekly
- Pink rainbow – beef: up to 300 grams a week
- Red rainbow – foods that are best avoided

- **Planetary Health Plate – EAT-Lancet**

EAT-Lancet⁴⁹ is a non-profit organization dedicated to changing our global food system using science and new collaborations. The organization consists of an international group of scientists, researchers and specialists on health, nutrition, environment, and

⁴⁶ Ministry of Health, Nutrition Branch (2020). Healthy is Possible. [Israel's New Food Rainbow](#).

⁴⁷ FAO (2017). [Mediterranean food consumption patterns](#). White Paper.

The Knesset’s Research and Information Center (2023), [Health recommendations about meat consumption in Israel and in various countries](#)

Adler Dorit (2021), [Food Security and the Climate Crisis – the Mutual Influence of Food on the Environment and the Obesity Epidemic, Food Insecurity and Climate Emergency](#). Israeli Forum for Sustainable Nutrition, Change Direction.

⁴⁸ https://www.gov.il/BlobFolder/guide/dietary-guidelines/he/files_publications_food_dietary-guidelines-presentation.pdf

⁴⁹ EAT. [Food Planet Health](#). Summary Report of the EAT-Lancet Commission.

sustainability. The group was established in 2013 to develop healthy and sustainable nutrition recommendations globally. Its objective is to present a healthy diet that will contribute both to human health and to the planet, by balancing human nutritional needs with protection of ecosystems and the environment.

The organization proposes a plate of Planetary Health Diet⁵⁰, with half of the plate comprised of vegetables and fruits. The other half of the plate should contain first and foremost whole grains, vegetable protein sources, unsaturated vegetable fats, and small amounts of animal protein sources.

- **Germany – The German Nutrition Society (DGE)**

The DGE Nutrition Circle⁵¹ is a circle-shaped graphic model intended to illustrate the nutrition guidelines. Food choices are made according to the Nutrition Circle, which is divided into 7 segments representing the various food groups while illustrating the relative quantities of every food group that is required for a healthy diet: cereals, cereal products, potatoes, vegetables and salads, fruit, milk and dairy products, meat, sausages, fish and eggs, oils and fats, beverages.

- **Nordic Nutrition**

The Nordic Nutrition Recommendations report⁵² was drafted by the Nordic Council of Ministers and advocates a recommended dietary pattern over meticulous journaling of daily food consumption. Key principles of Nordic nutrition: focusing on healthy eating patterns that combine a variety of foods rich in nutritious substances: ample consumption of fruit, vegetables, and whole cereals; consumption of lean protein sources (fish, chicken, beans, and legumes); consumption of healthy fats (nuts, seeds, and rapeseed oil) and limiting unhealthy fats; Minimal consumption of sugar, salt, and processed foods.

- **Singapore – My Healthy Plate**

The Singaporean plate⁵³ is an easily comprehensible visual guide designed by the Singapore Health Promotion Board, based on consumption of a wide range of foods in the appropriate quantities to meet daily nutritional needs. Key principles: a quarter of

⁵⁰ EAT (2019). [Healthy Diets From Sustainable Food Systems](#). Healthy Diets From Sustainable Food Systems. Summary Report of the EAT-Lancet Commission. (Retrieved Jan. 2024)

⁵¹ The German Nutrition Society (DGE). DGE Nutrition Circle. <https://www.dge.de/english/dge-nutrition-circle/> (Retrieved Feb. 2024)

⁵² The Nordic Nutrition Recommendations (NNR) 2023
<https://pub.norden.org/nord2023-003/nord2023-003.pdf>. (Retrieved Feb. 2024)

⁵³ HealthHub. Nutritious Foods For A Healthy Diet. <https://www.healthhub.sg/programmes/nutrition-hub/eat-more>. (Retrieved Feb. 2024)

the plate is dedicated to whole cereals, another quarter to good protein sources, half of the plate to fruit and vegetables.

- **The World Health Organization**

The World Health Organization⁵⁴ (WHO) also provides recommendations⁵⁵ for a personal nutrition plate (about 2,000 kcals per day): half of the plate for vegetables and fruit (excluding potatoes), a quarter for whole grains (whole wheat, barley, wheat berries, quinoa, oats, brown rice), a quarter for proteins.

- **USA**

The recommended nutrition plate by the US Department of Agriculture (USDA)⁵⁶ represents five recommended food groups according to the nutrition guidelines for 2020-2025. The guidelines offer tips on what to eat and drink to meet nutritional needs, promote health, and help prevent chronic illnesses. This edition of the guidelines provides guidance for healthy eating patterns along various stages of life, from birth to adulthood, including pregnant and breastfeeding women.

* Nutrition recommendations in other countries, such as Japan, the UK, and Australia, were also examined⁵⁷.

5.2.3 Choosing the Nutrition Plate Composition

Comparison between Nutrition Recommendations in Israel and the World

To propose the recommended nutrition plate, we compared the daily nutritional composition (quantity in grams per day, calories per day, in each food group) from several sources (Israel, EAT Lancet, Germany, Nordic Nutrition, and Singapore). These specific sources were chosen for several reasons, including having sufficient information from which to extrapolate about the food groups, and diversification in food and dietary culture.

⁵⁴ <https://www.hsph.harvard.edu/nutritionsource/healthy-eating-plate/>. (Retrieved Feb. 2024)

⁵⁵ <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>

⁵⁶ USDA – [My Plate](#)

⁵⁷ [Japanese Health and Nutrition information](#), [UK-The Eatwell Guide](#), [Australian dietary guidelines](#).

The food groups were established based on several sources: CBS⁵⁸, the Ministry of Health's Nutritional Food Rainbow⁵⁹, and EAT Lancet's nutritional table⁶⁰. These sources were chosen for the following reasons:

- ▶ The Israeli Ministry of Health and the World Health Organization⁶¹ recommend the mediterranean diet as it promotes longevity and is connected to a lower risk of developing chronic illnesses such as cardiovascular diseases, diabetes, and certain types of cancer. The mediterranean diet also helps manage and maintain a healthy weight. The mediterranean diet is based on the traditional nutrition of the countries along the Mediterranean Basin, and includes a high consumption of fruit, vegetables, whole grains, nuts, legumes, olive oil, fish; moderate consumption of chicken, eggs and dairy products (especially yogurt and cheese), and sparse consumption of red meat.
- ▶ The Ministry of Health's Nutrition Branch has provided detailed recommendations about plate composition with reference to the various food groups.
- ▶ EAT Lancet is a global science-based platform for changing food systems. Recommendations in the EAT Lancet report were established by leading scientists from 16 countries and various disciplines (human health, agriculture, nutrition, political science, and environmental sustainability) to define global scientific goals for a healthy diet and sustainable food production⁶².

We also sought to adapt our food groups as much as possible to the food groups specified in the CBS's Food Supply Balance, to allow future conclusions about the required levels of domestic production and import based on the nutrition plate. In all chosen sources, quantities were calculated in daily grams per capita for each food group. The caloric calculation in each food group was conducted based on EAT Lancet's nutritional table.

Generally, a comparison between the different countries reveals that **the recommendations for each food group differ in nature between different geographic areas and are adapted to the local consumption culture** (Figure 10). Additionally, a comparison of the total per capita calories in different countries indicates that indeed **the Israeli Ministry of Health's recommended total calorie intake is similar to that of other countries and/or cultures** (Figure 11).

⁵⁸ CBS. Chart 21.20 Food Supply Balance 2021. Published 08/29/2023.

⁵⁹ Ministry of Health, Nutrition Branch (2020). Healthy is Possible. [Israel's New Food Rainbow](#).

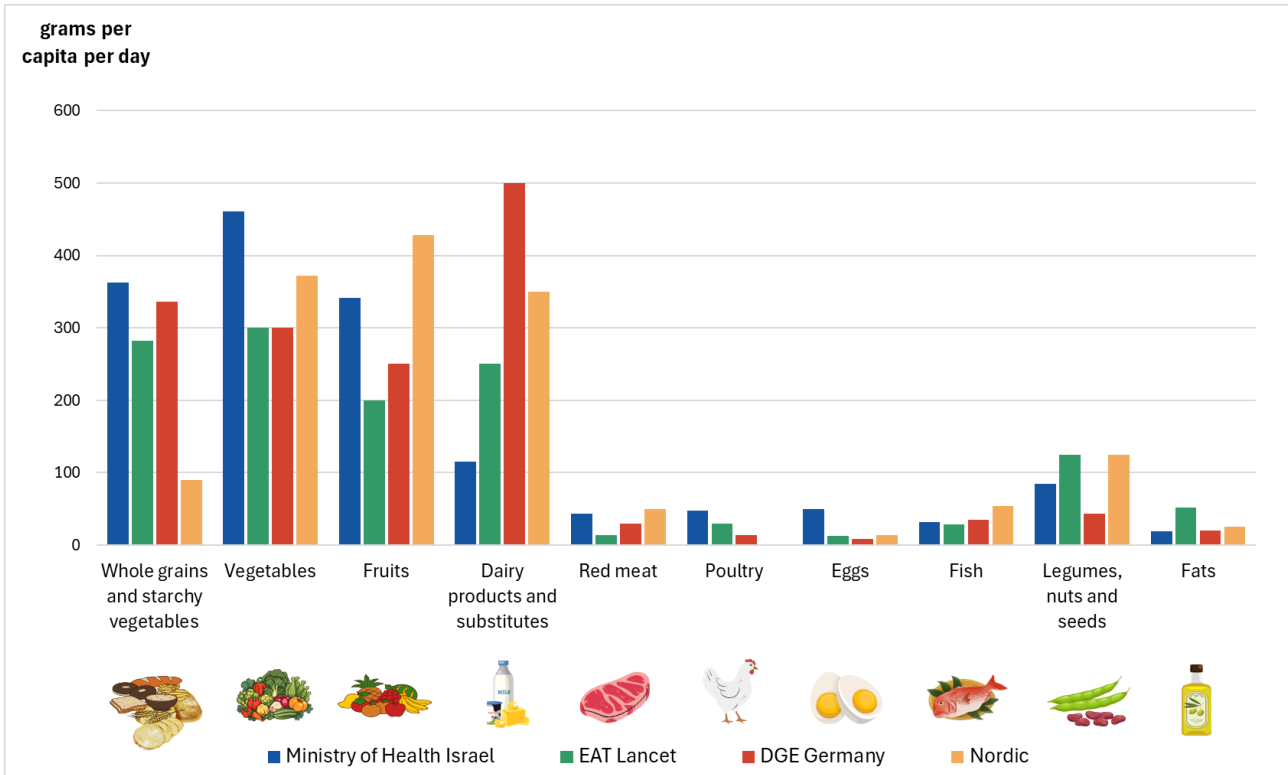
⁶⁰ [Food Planet Health](#). Summary Report of the EAT-Lancet Commission.

⁶¹ <https://www.who.int/director-general/speeches/detail/who-director-general-s-remarks-at-food-systems-summit--24-july-2023#:~:text=The%20traditional%20Mediterranean%20Diet%20is,focus%20on%20marine%20food%20sources>.

⁶² [The EAT-Lancet Commission on Food, Planet, Health](#)

Examining the nature of the recommended plate, we have found that the World Health Organization also recommends a mediterranean diet^{63,64}. The mediterranean diet is at the center of the Ministry of Health’s recommendations and can be suitable for the geography and overall culinary character of the Israeli residents’ diet. Therefore, **the nutrition plate based on the Ministry of Health’s Food Rainbow is the plate recommended by us** (Figure 12).

Figure 10: Food Group Recommendations (daily gram per capita)



Processing by Samuel Neaman Institute of data by Ministry of Health⁶⁵; EAT Lancet⁶⁶; DGE Germany⁶⁷; Nordic Nutrition Recommendations – NNR⁶⁸

* Fats – the Ministry of Health refers to “vegetable fats and animal fats”, while EAT Lancet refers to “unsaturated fats and saturated fats”. Although the groups are not completely identical, we have decided on the above segmentation.

⁶³ <https://www.who.int/news-room/fact-sheets/detail/healthy-diet>.

⁶⁴The WHO recommends other dietary compositions, such as Nordic and Japanese nutrition, but emphasizes the importance of adapting the diet to local culture and local food systems.

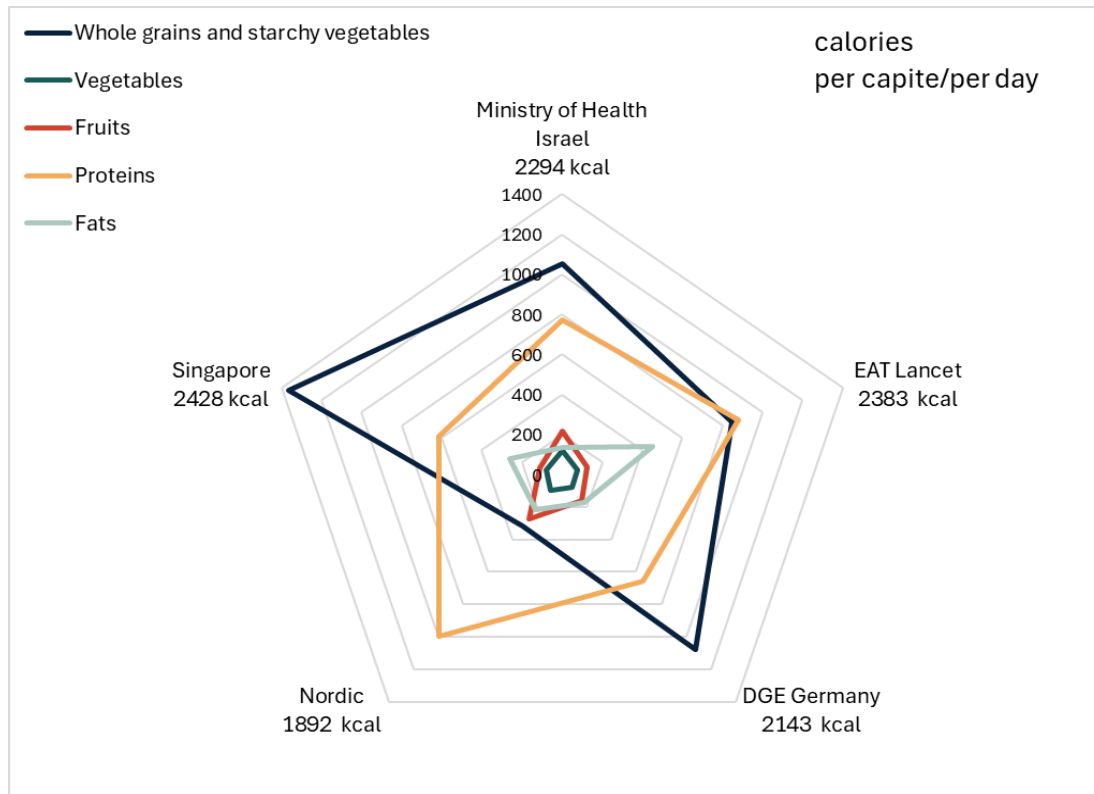
⁶⁵ Ministry of Health, Nutrition Branch (2020). Healthy is Possible. [Israel’s New Food Rainbow](#).

⁶⁶ [the EAT-Lancet Commission](#);

⁶⁷ The German Nutrition Society (DGE). DGE Nutrition Circle. <https://www.dge.de/english/dge-nutrition-circle/> (Retrieved Feb. 2024)

⁶⁸ The Nordic Nutrition Recommendations (NNR) 2023 <https://pub.norden.org/nord2023-003/nord2023-003.pdf>. (Retrieved Feb. 2024)

Figure 11: Food Group Recommendations – Total Daily Calories



Source: processing by Samuel Neaman Institute of data by Ministry of Health⁶⁹; EAT Lancet⁷⁰; DGE Germany⁷¹; Nordic Nutrition Recommendations – NNR⁷²; Singapore Nutrition Recommendations⁷³.

⁶⁹ Ministry of Health, Nutrition Branch (2020). Healthy is Possible. [Israel's New Food Rainbow](#).

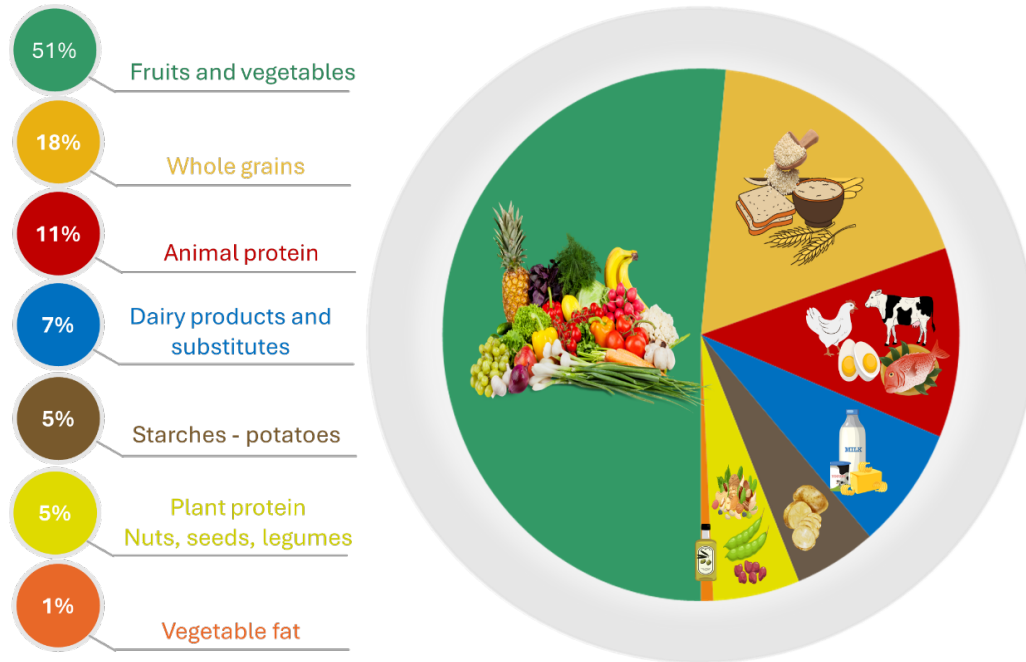
⁷⁰ [the EAT-Lancet Commission](#);

⁷¹ The German Nutrition Society (DGE). DGE Nutrition Circle. <https://www.dge.de/english/dge-nutrition-circle/> (Retrieved Feb. 2024)

⁷² The Nordic Nutrition Recommendations (NNR) 2023 <https://pub.norden.org/nord2023-003/nord2023-003.pdf>. (Retrieved Feb. 2024)

⁷³ HealthHub. Nutritious Foods For A Healthy Diet. <https://www.healthhub.sg/programmes/nutrition-hub/eat-more>. (Retrieved Feb. 2024)

Figure 12: Recommended Nutrition Plate



Source: processing by Samuel Neaman Institute of data by Ministry of Health – [Israel's New Nutritional Food Rainbow](#).

* The nutritional plate is based on the weight (in grams per day per capita) of each food group out of total

Protein Sources in the Israeli Plate

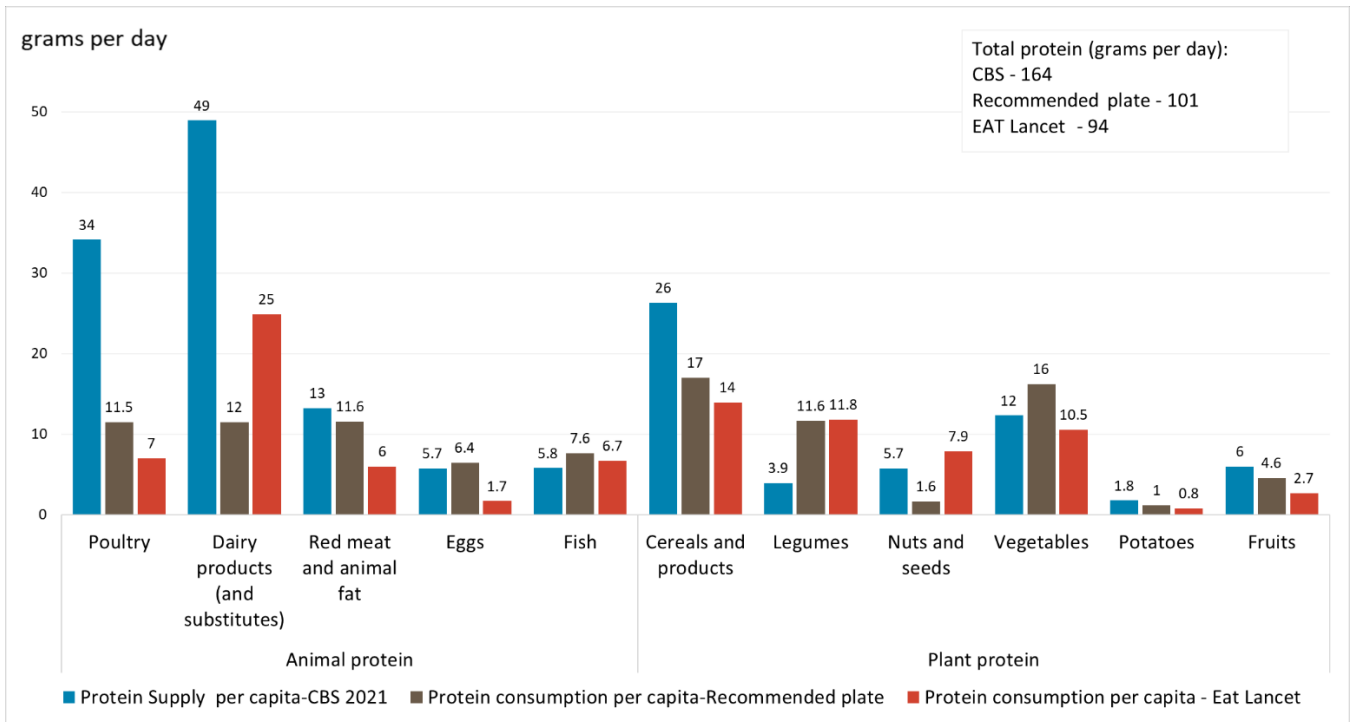
Recommended protein sources merit a dedicated discussion, as various nutrition recommendations assert that red meat consumption should be minimized and replaced with alternative protein sources (such as legumes, nuts and seeds, fish, and chicken). This recommendation is supported by the following reasons⁷⁴:

- Health: consumption of red meat and processed meat has been connected to chronic illnesses such as cardiovascular diseases, cancer, and diabetes. Reducing consumption can help reduce the risk of these diseases.
- Environment and sustainability: the meat industry contributes to greenhouse gas emissions, water and soil pollution, and waste of natural resources (including animal feeding). Reducing consumption can reduce the adverse environmental impact.
- Animal welfare: the meat industry often entails harsh conditions for animals. Reducing consumption can contribute to improving animal welfare.

⁷⁴ The Knesset's Research and Information Center (February 2023). Health recommendations about meat consumption in Israel and in various countries.

Generally, the recommended protein intake (101 grams per capita according to the recommended nutritional plate and 94 grams per capita per day according to the EAT Lancet nutritional guidelines) is lower than the actual protein supply reported by the CBS (164 grams per capita per day) (Figure 13). The main differences are in proteins from dairy and dairy products, poultry, also from grains and their derivatives.

Figure 13: Recommended Daily Supply and Consumption of Vegetable and Animal Protein Per Capita



Source: processing by Samuel Neaman Institute of CBS data, Chart 21.20 Food Supply Balance 2021, published 29/08/2023; Ministry of Health – [Israel's New Nutritional Food Rainbow](#); FAO⁷⁵ (2019). FAO/INFOODS Food Composition Table 04_NV_stat_39.

* The required protein quantity was calculated based on the FAO's food composition table and was adapted to the food group quantities specified by the Ministry of Health and CBS.

* Excluding alcoholic beverages, tea and coffee, and sugars.

⁷⁵ FAO data was processed as follows: fats were separated into animal fats and vegetable fats. Meat and poultry were separated into red meat and poultry (protein sources such as crickets, caterpillars, ants, camel, alligator, worms, snails, termites, etc. were removed from the list); red meat also includes animal fats, the vegetable group also includes starchy vegetables excluding potatoes.

Nutrition Plate Round Table

On 24 July 2024, the Samuel Neaman Institute held a round table meeting about the recommended nutrition plate for Israeli residents. The meeting was attended by researchers from Samuel Neaman Institute and by representatives from research centers, NGOs, and government ministries. The meeting included a presentation of the aforementioned data and analysis, and a discussion on the desired plate composition in 2050.

The discussion indicated that:

- All parties recognize the importance of a healthy, sustainable and accessible-to-all diet.
- Nutrition recommendations must take sustainability into account.
- A sustainable nutrition plate should contain food produced in a way that reduces over exploitation of natural resources, reduces greenhouse gas emission, and sustains food supply chains.
- Comprehensive efforts are required in order to change the public's dietary habits.

According to the new Ministry of Health recommendations⁷⁶, the Mediterranean diet is sustainable. Israeli weather conditions, climate, and soils, along with the country's advanced agricultural technology methods, enable the production of diverse varieties and species of vegetables, fruits, legumes, nuts, etc., which are the crops that primarily constitute the mediterranean diet. These conditions allow agricultural production that entails less resources for refrigeration, preservation, and transportation of food, contributing to reducing greenhouse gas emissions.

- Moreover, a sustainable nutrition plate must emphasize healthy alternatives. To decide upon the recommended composition, we must rely on reliable information sources and on research on nutrition and the environment from various countries, examining their different recommendations.

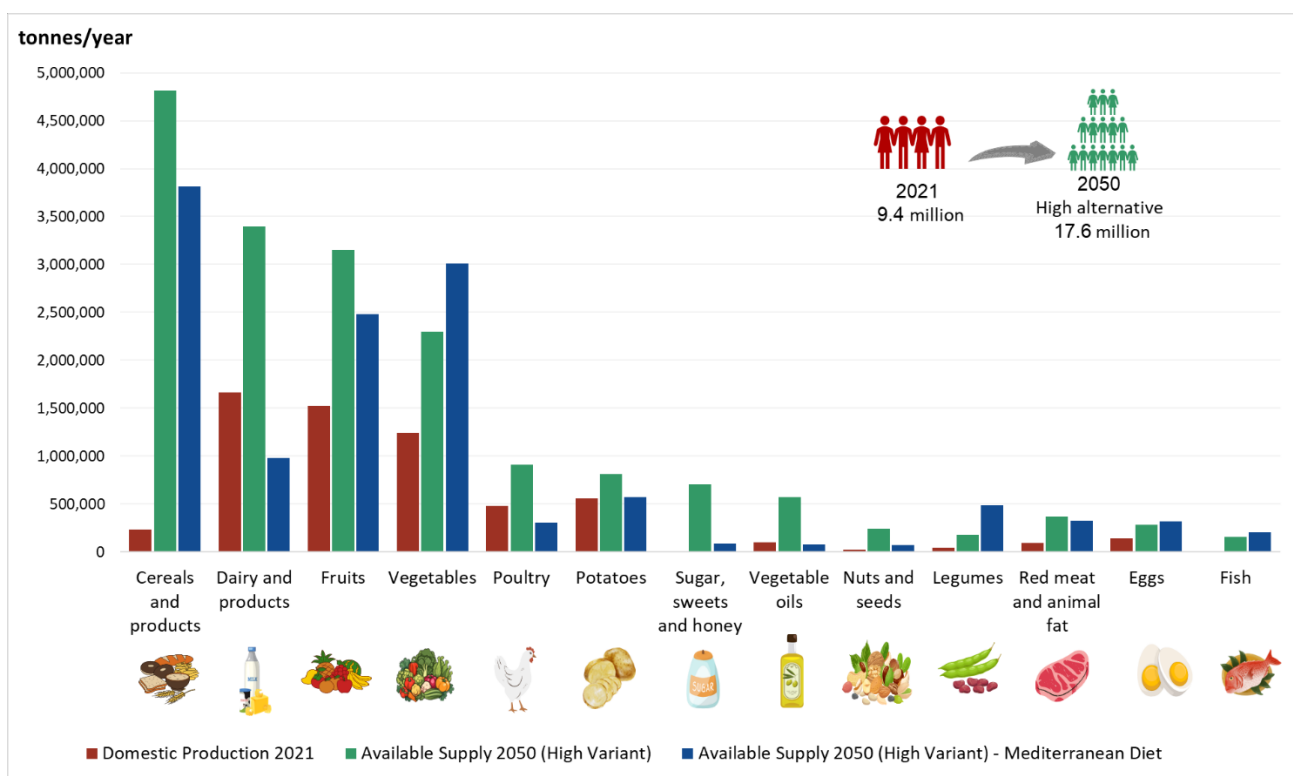
These insights reinforce our choice of a recommended nutrition plate based on the Ministry of Health's recommendations.

⁷⁶ Israeli Ministry of Health. [New Nutrition Recommendations](#), June 2020.

5.3 Production and Demand 2050

When examining the food quantities required for 2050, we should also examine the effect of the population's dietary habits. As aforementioned (Figure 9), given production and consumption characteristics that are similar to the current ones, the required available supply will be 85% higher in million tonnes per year (for the highest population growth prediction: 17.6 million residents). **However, if we change the Israeli diet according to the nutrition plate recommendations, the gaps between current production and future demand will be reduced across nearly all food groups** (Figure 14). It is important to note that alongside a decrease in most categories, there will be an increase in vegetables and legumes. Long-term planning must address these gaps specifically, as these categories are essential to a healthy and sustainable diet.

Figure 14: Production 2021 and Available Supply 2050 as Required for Nutrition Plate (entire Israeli population, tonnes per year)



Source: processing by Samuel Neaman Institute of CBS data, Chart 2.10 Israel population forecast (1) for 2025-2065, by population group, sex and age, published 12/09/2023; Chart 2.3 Population, by population group, religion, sex, and age – 2021 average, Published 15/09/2022; Chart 21.20 Food Supply Balance 2021, published 29/08/2023. Ministry of Health – [Israel's New Nutritional Food Rainbow](#)

* Available supply includes other uses and depreciation, meaning use for the production of another consumer good that is included in the balance (animal feed, seeds for planting, and industry uses); Whole grain and their products, including maize

* The composition of the items in each food group remains true to the original content of the food group in the sources of information (CBS, the Ministry of Health's nutritional recommendations) without deriving the quantities of the raw materials within them.

6. Summary and Interim Conclusions

This interim report focuses on the recommended nutrition plate for Israel 2050. As aforementioned, this plate should serve both the health and environmental needs of Israeli citizens. It is clear to us that this plate is the “desirable” plate, yet we have seen fit to set this guiding star, in which light we can prepare Israel’s national goals and plans en route to 2050. Therefore, and in light of the information gleaned from various sources and our consultations with colleagues, we have reached the conclusion that the plate should be based on the Ministry of Health recommendations, centered around the mediterranean diet.

The reasons for choosing this plate are as follows:

- It is a basis for a healthy and sustainable diet
- It has a positive impact on reducing gaps between production and predicted consumption according to population growth
- It is more heavily based on net domestic production
- It is suitable for the Mediterranean Basin and the local culture

It is important to note that relying on this plate entails some new challenges; even if the entire Israeli population transitions to the recommended mediterranean diet, we will still face the significant challenge of increasing our production capacity by at least 45%. In certain categories, like vegetables and legumes, the gap is especially great and must be addressed using dedicated tools and programs. Increasing reliance on fresh domestic production will require planning efficient supply and distribution chains that are suitable for these raw materials. All of the above will also require tools for strengthening agriculture in general and farmers in particular.

Above all, the question is to what extent will the public change its ways and consume a healthy diet? It is therefore essential to educate the public and the next generations about a healthy and sustainable diet. Concurrently, as the modern lifestyle and Israel’s crowding will, by all predictions, entail continued urbanization, we will also require the cooperation of the finished products industry – the food industry. For the food industry to collaborate in this process, we must create a regulatory environment that promotes healthy and beneficial solutions and alternatives, such as alternatives for animal protein sources. Alternative protein sources need to take up a significant portion of the plate, to reduce our dependence on animal protein and to minimize greenhouse gas emissions.

It is already clear that the range of challenges and their intensity require extensive intersectoral cooperation.

From this point, we proceed with defining the reference scenarios and national objectives that will serve as the foundation for the 2050 strategic plan.



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