



Review Paper

Achieving Food Sustainability through Sustainable Diets: Way to a sustainable future

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Abstract

Attaining food sustainability has become an urgent need to ensure a healthy life for current as well as the future generations. The Sustainable Development Goals put forward by United Nations in 2015 also highlight on the importance of sustainable food systems so that by 2030 the entire mankind can enjoy health, peace and prosperity. A greater part of world today is affected by various health disorders like Obesity, Diabetes, CVDs, micronutrient deficiencies, under nutrition, etc. - showing the need to reform the current food systems. Proper nutrition education and establishment of sustainable food practices can reduce the incidence rate of such disorders. Sustainable diets focus on encouraging food habits that are adequate in nutrition, economical, have cultural acceptance are environment friendly. Present paper highlights on achieving food sustainability with the help of sustainable diets minimizing the impact on environment by adopting local food and dietary practices. This thus will help to establish a sense of food health security worldwide therefore leading to a sustainable future.

Keywords: Food sustainability, Health, Local food, Nutrition, Sustainable diets.

Introduction

Food is an essential component of human life. It is well known that inclusion of good food in one's diet can help prevent diseases, maintain health, improve one's immune strength and thus enhances one's life longevity. Providing healthy and nutritious foods for the mankind globally without negatively affecting the environment is a big challenge of the 21st century. Plus, the advancements in technology and transportation have made it possible to consume a wide variety of foods from different regions throughout the year¹. A large segment of population today suffers from under nutrition, micronutrient deficiency (Hidden hunger) or the lifestyle disorders (NCD's) like obesity, Type II Diabetes, Cardiovascular disorders, PCOS, etc.

Additionally, the food choices we make in the day to day life have a major impact on our surroundings. The transition into a more sustainable system is amjorly affected by the choices consumers make and how the term "sustainability" is interpreted by them². Food which has undergone immense processing the one that reaches to your plate from a higher level from the food chain tends to require more energy release more global warming pollution into the environment. For instance, the "carbon footprint" of hamburger includes all of the fossil fuels that that were used into producing the fertilizer pumping the irrigation water to grow the corn plantation that fueled the cow may also include emissions that result from converting forest to grazing. Meat obtained from ruminant animals such as cows, goats

sheep has a particularly large carbon footprint because of the methane which gets (a potent global warming gas) released from the animals' digestion process manure. Sea foods can also have a major effect on the environment and can favor to significant global warming³. This indirectly contributes to climate change that is negatively affecting the entire world. Extreme weather changes are one of the major reasons behind a rise in the undernourishment and poor nutrition status globally. There's an urgent need to fix this issue so that there's minimum impact on the environment and thus future generations will be able enjoy good health and life.

What is Food Sustainability? Why is it important?

Over the past decade, the notion of "sustainable development" or "sustainability", two terms frequently used interchangeably, has emerged as a prevailing framework embraced by the scholars government officuals alike⁴. The word 'sustainability' refers to the acts that help in meeting the current needs in such a way that it doesn't compromise on the future generations to meet their own needs⁵. Sustainability thus can be defined as the use of such practices that fulfills the current needs of the society while ensuring a reserve for our long-term survival without compromising on the environment. 'Food sustainability' can be explained as the ways of producing food in such ways which will have a minimal influence on the environment, renders efficient use of resources that we obtain from nature, supports the local farmers economy enhances the life's quality in communities that are involved in food production including the animals as well as

the people. The Sustainable Development Goals put forward and set by United Nations in 2015 also emphasize on the significance of sustainable food systems so that by 2030 the entire mankind can enjoy health, peace and prosperity.

Food sustainability has been of utmost importance for a number of reasons. With the increasing worldwide population, it becomes progressively hard to produce enough quality food to meet the requirements of current as well as future generations. According to the United Nations Sustainable Development Goals Report 2022 (Figure-1), about 1 in 10 people suffer from hunger worldwide, 149.2 million children under the age of 5 suffer from stunting, there's been a surge in the food prices thereby affecting a huge segment of population globally. As of now, we are already unable to meet the needs of current population there's a chance that the population will reach 10 billion by 2050. It is expected that this will create a need to increase the food production by 60-70 percent to fulfill this rising demand. This indeed would require for huge forest area to be converted into agricultural land which will negatively impact the environment.

Sustainable Diets: Definition

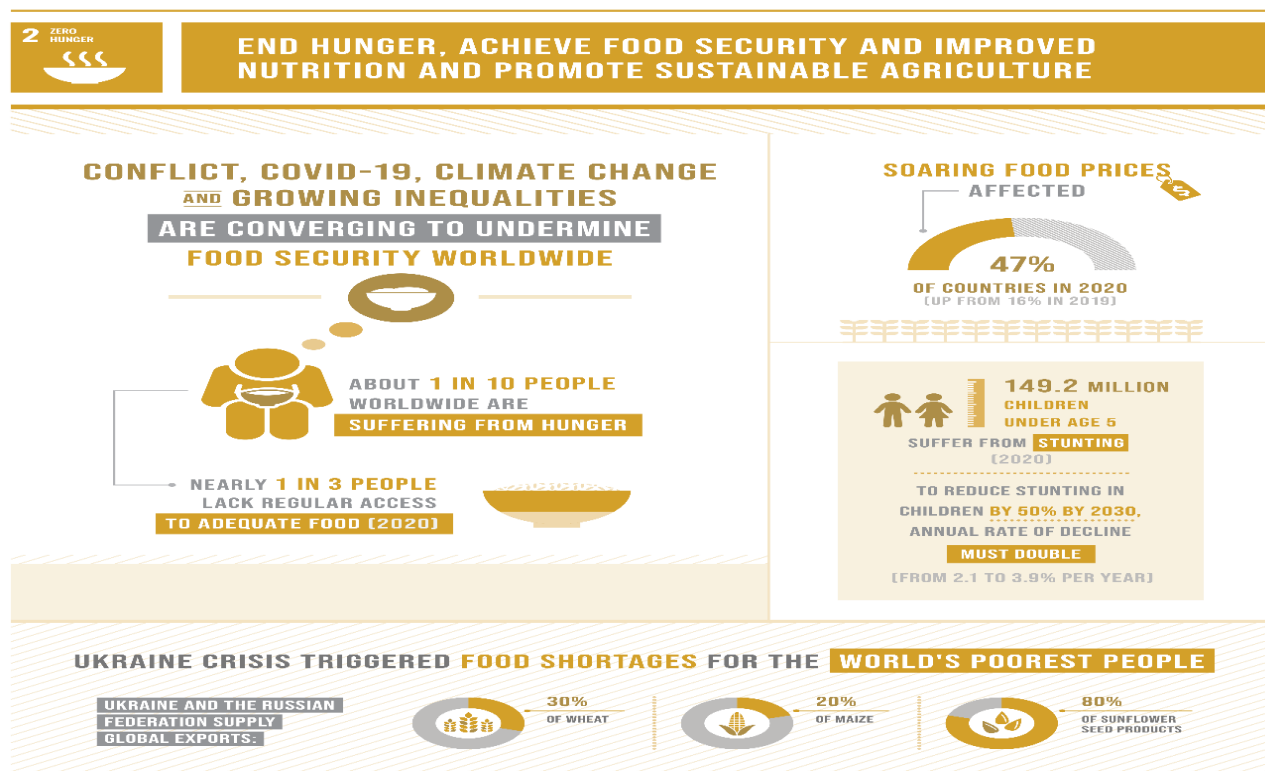
A diet can be briefly defined as-it consists of the foods that an individual ingests which help meet energy needs, includes a

diversity in the food that helps to meet nutritional needs, are easily accessible affordable, also enrich preserve social cultural traditions⁶. Diet helps shape human health and nutrition which in turn affects the nation's economy as it is correctly said Health and Wealth. A healthy population with optimum nutrition holds an important base of the human capital in turn contributes to economic development. The concept of sustainable diets was proposed in 1980s can be defined as –

‘A sustainable diet is a diet that contributes to the good nutritional status long term good health of the individual/community, that contributes to, is enabled by, sustainable food systems, thus contributing to long term food security nutrition⁷.

FAO further defined sustainable diets as follows - Those diets with low environmental impacts which contribute to food nutrition security to healthy life for present future generations. Sustainable diets are protective respectful of biodiversity ecosystems, culturally acceptable, accessible, economically fair affordable, nutritionally adequate, safe healthy while optimizing natural human resources⁸.

Figure-2 depicts the key components of a sustainable diet.



THE SUSTAINABLE DEVELOPMENT GOALS REPORT 2022: UNSTATS.UN.ORG/SDGS/REPORT/2022/

Figure-1: UN Sustainable Development Goal 2- Zero Hunger⁹.

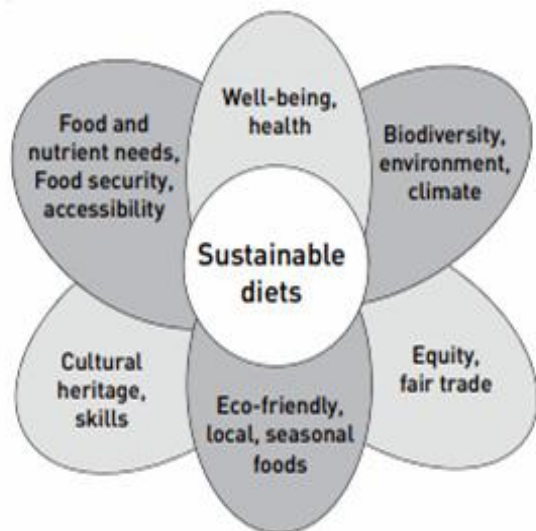


Figure-2: Key components of a sustainable diet¹⁰.

Why go for Sustainable Diets?

Sustainable diets are beneficial to the population globally as they impart benefits not only to the mankind but also to the environment. Following are the benefits of a sustainable diet-

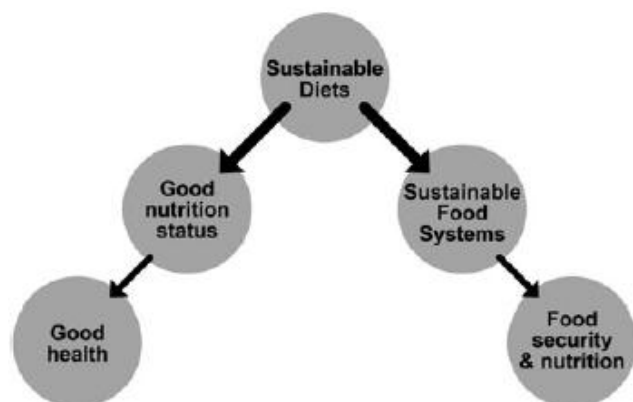


Figure-3: Two dimensions of sustainable diets⁷.

Encourages the inclusion of local and seasonal foods: ‘Local food’ can be called as the foods that are produced in the nearby locality to the consumer i.e. just at a short distance away from the consumer probably in the same city or state. It can also be referred to have a certain traditional or cultural significance. The definition adopted by the US Congress, 2008 in the “Food, Conservation, Energy Act” states - a product can be considered and called as a “local or regionally produced agricultural food product” if (a) The grown food travels less than 400 miles from the source where it was grown (approximately 644 km) or (b) It should be produced in the same state in which it is marketed¹¹.

Seasonal foods are those which are eaten when their harvest time is at its peak have a superior nutritional value.

Thus, as this food is freshly produced travels less distance before reaching our plates, its nutrient concentration and retention is higher (due to less oxidation of the nutrients and phytochemicals) when compared to the exotic foreign food items that travel thousands and hundreds of miles from far distances.

Supports Farmers and the local economy: Production of local and seasonal crops helps generate jobs that support the employment of the local population such as farmers which indeed help them in their daily bread earning. ‘Farmers market’ a concept in which a group of farmers gather at a specific location to sell their own produce directly to the consumers. It is usually located in the main cities or towns. It can offer farmers more monetary profit over selling the produce to wholesalers or large grocery stores.

Easy on your pockets (Budget friendly): Local and seasonal foods are usually less expensive. Being budget friendly, it can be preferred by the lower strata and middle strata income groups. This thus will help in ensuring food and nutrition security worldwide.

Encourages the inclusion of traditional/ cultural foods: Ancient traditional foods and recipes have a number of nutritional and health benefits. The procedures and techniques used in old age cooking help in maintaining the nutrient quality as well improving its nutrient bioavailability. Inclusion of such recipes in the diets thus helps in preserving the significance of our traditional and cultural knowledge.

Ensures complete nutrition: Sustainable diets insist on eating whole foods, local and seasonal ingredients, mineralizing processed and packaged foods consumption, thereby increasing the nutrient concentration (antioxidants, phytochemicals, vitamins minerals) of the diet. This indeed helps in ensuring the nutrition adequacy of the diet which helps in the maintenance of a good nutrition status therefore good health.

Sustainable diets are environment friendly: The foods we produce and ingest have a massive influence on the environment. The agriculture sectors require a large area, lead to deforestations produce large amount of green gas emissions. According to a report in 2018, the meat and dairy industry majorly produces about 14-15% of total greenhouse emissions. As sustainable diets focus on the inclusion of the local and seasonal foods in the diet, also promoting Vegetarianism or Veganism, thus saving tons of carbon dioxide, methane other greenhouse gases emission. This therefore helps in the welfare promotion of soil, water, local biodiversity and the entire wildlife.

Ways to make Sustainable Food choices: Eat Local: Include locally grown foods in your diet. Opt for fresh foods that have undergone fewer processing steps from the farm to plate. Different processing techniques like freezing, packaging,

cooking refrigerating food all increase energy use³. Such foods are nutrition packed usually less loaded with toxic preservatives. The fresher food you eat, the healthier you are.

Eat Seasonal: Seasonal produce ensures quality nutrition. Include seasonal foods in your diet as they are power-packed with nutrients.

Eat Variety: Various foods contain various nutrients possessing different health benefits. Inclusion of a variety of locally and seasonally grown produce ensures that your body receives the numerous health benefits thus helping in health maintenance and disease prevention.

Reduce Food Waste: Food waste can be referred to the act where food that is fit for consumption is usually discarded due to numerous reasons throughout the entire food system. Prevention of food waste is a major global concern. Consumers directly indirectly are responsible for wasting a huge amount of food globally. A recent study estimated that the average household wastes about 14 percent from the food purchases it makes¹¹. In addition to the water, energy, pesticides, global warming pollution that went into producing, packaging, transporting this discarded food, nearly all of this waste ends up in fills where it gets decomposed thereby releases even more heat-trapping gas in the form of methane³. We as consumers must make sure to use the food to its best potential aim to reduce food wastage. This can be done by using the food products before they expire by practicing food composting.

Go Vegetarian/ Vegan: Eat foods that are lower on the food chain i.e. include more fruits, vegetables grains to your diet limit your intake of animal-based foods. As discussed above, it is well known that vegetarian or Vegan or Plant based diets have less carbon footprints when compared to animal-based diets. Thus, opting Vegetarian/ Vegan/ Plant based diets can be a smart choice to protect the environment as well as your health.

Eat traditional: Traditional food/ recipes are those which have been consumed for many generations or are passed on through generations. They are nutrient-rich have a proven history of supporting and enhancing health wellness. In short, your body knows better how to digest retain the nutrients from them. They also produce a sense of comfort and belonging.

Role of Nutrition education in sustainable eating: Proper nutrition education plays a very important role in helping one to make smart food choices without needing expert help. It is the tool that helps to bring awareness in the younger generations about the food choices and its impact on the environment. It is essential to inculcate nutrition education at the school and college levels to not only teach about sustainable eating but also healthy eating so that they can apply them in their own lives. This shift in the mentality is possible only via the learning process¹².

Conclusion

The food production as well as the food utilization systems directly indirectly impacts the environment. Greenhouse emissions are produced at various levels of food systems i.e., production, haling, transportation, consumption, etc. Shifting to sustainable diets eating habits that encourage the production usage of local, seasonal and traditional foods can help preserve the environment. It indeed supports the local economy the traditional customs as well. On the other h, being budget friendly, they can help decrease the incidence rate of under nutrition, malnutrition hunger in the low strata income groups thus supporting the SDG goal 2 (Zero Hunger) thereby improving the nutrition and health status of the global population. Henceforth, Sustainable diets will help in attaining food and nutrition security worldwide. Imparting proper nutrition education regarding sustainable diets and eating can help majorly in generating awareness in the global population.

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