

# The Role of Culture, Economic, and Food Environment in Shaping Choice for Sustainable Diet

Dr. Priyanka Devi<sup>1</sup>, Jayshri Dhanak<sup>2</sup>

<sup>1,2</sup>Gest Faculty, University

## Abstract

The social groups such as friends, family, institution and peers influences sustainable food consumption. The prices of substitute product will also affect consumption of sustainable foods. This is because consumers will prefer a substitute product especially if it has a lesser price. The principles of sustainable development consist of economic, societal, and environmental considerations. Economic systems and social structures shape social impacts on health, which are embedded in the broader environment and affect the distribution of energy resources worldwide. Environmental sustainability is a long-term result of socio-economic development. A study was conducted to determine the food consumption pattern in a rural area and urban area. The major objective was to investigate the influence of socio economic factors on food consumption patterns in the rural area. A random sample of 166 households was interviewed through a pre-designed questionnaire inquiring about household size, rate and level of education, total monthly income, and expenditure on various food commodities consumed. An ordinary least squares method was employed to analyze the data. The results indicated that an average household size of 8.5 persons with a literacy rate of 94 percent, spent fifty-five percent per month of the total monthly income on food consumption. The empirical results revealed that wheat flour, milk, rice, vegetables, sugar, edible fats and tea were positively correlated with household size but meat, pulses, eggs and fruit were not significantly influenced by it. Similarly, household's monthly total income showed a positive relationship with the food commodities consumed, except wheat flour, vegetables and eggs. It may be concluded that majority of food commodities consumed had a positive response to household size and total monthly income. Therefore, it is imperative for policy makers to plan to improve food availability and to increase family income to enhance quality of rural life. The growing global population has given an ardent need to focus specially on sustainability issues arising from food consumption. The Socio-economic domain dwells on food affordability while emphasizing the social acceptability of foods. Results reveal a significant relationship between product price, income and education, social groups and substitutes on food consumption. Findings were discussed and conclusions drawn thereof.

**Keyword:** Household size, Total monthly income, Food commodities, economic, sociological, sustainable foods, Food expenditure.

## Introduction

**A sustainable diet is generally healthy and has a low impact on the environment and food supply:-** Adopting a sustainable diet can help an individual maintain their health while also ensuring the planet

has enough resources to feed future generations of humans. This is a complex idea, but in the simplest terms, a sustainable diet aims to positively impact the individual and environment, both now and in the future. There are no set rules on what makes a diet sustainable. However, some diets and food items might be more sustainable than others, and choosing them can help a person reduce their environmental impact. In this article, learn more about food and sustainability, as well as the health effects of sustainable diets.

**The most sustainable diet:-** The EAT-Lancet Commission, a group of scientists from 16 different countries, addressed the existing evidence surrounding the planet's food demands, waste, and overall diet.

According to the Commission, food production is among the largest causes of global environmental change. It notes that vegan and vegetarian diets have the greatest reduction in land use and greenhouse gas emissions, and that vegetarian diets use the least water.

**Their research notes that a universally healthy reference diet includes increasing consumption of:**

- vegetables
- fruits
- whole grains
- nuts
- legumes

**Meanwhile, a person eating sustainably will eat little or no:**

- refined grains
- added sugars
- red meat
- processed foods

As well as changing the environment with land clearing and other farming practices, food production has a major impact on greenhouse gases. According to the World Health Organization (WHO), food production accounts for 20–30% of global greenhouse gas emissions and up to 66% of water usage. Although a varied diet is crucial to human health, a truly sustainable diet will also focus on the health of the environment.

A sustainable diet considers the impact it will have on the environment, the individual, and the food chain as a whole. Factors that determine the sustainability of a certain diet include:

- nutritional availability
- relative cost
- biodiversity
- ecosystem protection
- general health

Considering all these factors should help ensure that the planet can continue providing enough food and resources for a growing population and future generations. Some eating plans already adhere to these guidelines more than others, so following them may be a simple way to make the diet more sustainable. Diets that are more sustainable than the standard Western diet include:

### **Vegetarian and plant-based diets**

The EAT-Lancet Commission notes that vegetarian and plant-based, or vegan, diets are more sustainable than those that contain meat and other animal products. The Commission notes that switching animal products for plant-based ones had environmental and health benefits.

**They state that:** “Overall, studies concur that plant-based foods cause fewer adverse environmental effects per unit weight, per serving, per unit of energy, or per protein weight than does animal source foods across various environmental indicators.” As a 2018 study notes, animal products such as meat, dairy, and eggs are common topics of conversation when considering sustainable diets. This is because these animal products have a few significant impacts to consider, including:

- land use
- water use
- greenhouse gas emissions

**In 2014**, the Food and Agriculture Organization of the United Nations noted that livestock makes up 14.5% of all human-induced emissions. Reducing the need for livestock and improving farming practices can help lower this impact. Some farms are now working on composting animal waste for fertilizer use and capturing methane gas to supply the energy needs of the farming operation. Animal foods can still have a place in a sustainable diet, though there is no agreement on how much animal food a person can eat and still be sustainable.

In general, a diet higher in plant foods is more sustainable than a diet higher in animal products. The issue is complex, with many contributing factors, including:

- land use
- overfishing
- methane production from farm animals
- water usage to grow crops to feed livestock

For example, farming an acre of corn for human consumption means all that food can go directly to feeding a growing human population. The people who eat animal products, the same acre of corn would go toward feeding livestock. However, the animals themselves also take up additional land and resources. So, farming animal foods requires significantly more land. Keep in mind that simply following a plant-based diet does not automatically mean the diet is more environmentally friendly or responsible than an omnivorous diet. For example, a vegan choosing highly processed packaged foods can have a much larger carbon footprint compared with an omnivore who carefully sources their animal products, raises their own chickens, grows their own vegetables.

### **Local food diets**

Local food diets focus on eating foods from the area where a person lives. However, depending on where a person lives, these diets can take significant planning to implement. People in northern regions, where fewer fruits and vegetables grow, may need to take extra steps to ensure they get enough nutrients. The idea behind local food diets is to reduce the “food miles” necessary for produce and other foods to reach supermarkets. This type of diet emphasizes eating seasonally, and many people may also choose to buy from local organic farms. That said, there have been few studies into the environmental impact of eating locally, and experts argue Trusted Source that locally grown or raised food does not always have a lower carbon footprint.

**However, some possible benefits for the environment include:**

- reducing the need for transporting food long distances
- reducing food packaging and waste, as the produce does not have to last as long
- reducing resources necessary to grow food that is out of season
- supporting local economies and small farms

**Flexitarian diet:-** The flexitarian diet focuses on plant foods but is also “flexible,” meaning people can include animal products sparingly. This diet aims to reduce the environmental impact an individual has by reducing their consumption of:

- red meat
- fish
- dairy
- packaged foods

A sustainable flexitarian diet could still include these products, just in smaller amounts, while keeping the focus on whole plant foods. However, there is no consensus on how many animal products a person can eat in a given time while being sustainable. A flexitarian diet is likely a good choice for a person’s overall health, too. Research into sustainable diets has found that people who follow vegetarian, vegan, pescatarian, and semi-vegetarian diets have a 12% lower overall mortality risk than people who eat meat.

The differences between vegan and vegetarian diets:- As with most dietary changes, many people find the switch to a more sustainable diet easier if they approach the process step by step. Making a huge change all at once may be difficult, and it may lead to a person reverting to their old diet if they cannot keep up with the changes. If a person is looking to make more sustainable changes to the way they eat, they should consider these steps. Taken all at once or individually over time, they can help a person reduce their impact on the environment and improve their health.

**Shift focus from animal products:-** It is not necessary to eliminate meat and animal products entirely if that is not an easy first step. However, small reductions in total consumption over time can have significant impacts. One simple way is to set aside one day of the week to eat only plant products, such as the popular “meat-free Monday” initiative. Eating less meat and fewer animal products will reduce a person’s carbon footprint and may help improve their health, too.

**Play up plants:-** Fruits, vegetables, and grains are rich sources of essential nutrients and vitamins and contribute significantly to better health. They also require fewer resources and have a lower environmental impact than meat and animal products. Plant-based proteins, such as tofu, legumes, and beans, are more environmentally friendly than meats, too.

**Flip the plate:-** A person looking to eat more sustainably can make an effort to flip the ratio of foods on their plates from mainly meat to primarily plants. A plate with at least half vegetables and one-quarter grains will naturally be more sustainable than a plate with a large piece of meat and smaller servings of vegetables and grains.

**Shop locally:-** One of the best ways a person can reduce their impact on the environment is by reducing how much packaging, processing, and shipping their food needs. That can begin with buying local foods, including both plant and animal products. When a person buys closer to the source, they can also seek out and support producers who use environmentally friendly growing methods, such as regenerative farming, or people who ethically raise their stocks.

**Eat seasonally:-** Shopping locally inevitably means eating seasonally, which is another way to eat more sustainably. Seasonal eating requires fewer resources to ship out-of-season foods great distances, and it cuts down on greenhouse and hothouse use, which also require more resources.

**Meal plan to reduce food waste:-** Food waste is among the greatest contributors to greenhouse gas emissions. Uneaten food decomposes in landfills, releasing methane gas, one of the most potent greenhouse gasses. A person can curb food waste by planning what they're going to cook and eat every week, shopping only for what they plan to use, and using leftovers.

**Cut down on processed foods:-** Processed foods require many resources to be manufactured. Plus, most packaged and processed foods are made in one location and then shipped hundreds or thousands of miles to a store. Begin by swapping out packaged foods such as cereals and snack foods with whole foods, such as grains, fruits, and vegetables.

**Eat fewer calories:-** Reducing total food consumption is one way to eat a more sustainable diet. If a person eats less food, they require fewer resources. Plus, it is possible to eat fewer calories and still have a healthy diet that is filled with essential vitamins and nutrients. As a bonus, eating less may help a person lose weight, if that is a concern.

**Non Vegetarian Nutrition:-** Generally, switching to a sustainable diet has little to no risk. If a person takes some conscious steps to ensure that they meet all their nutritional needs, reducing the intake of animal products and increasing the intake of plant foods can still cover all their nutritional requirements. The sections below discuss the specific nutritional elements of switching to a more sustainable diet.

**Fruits and vegetables:-** Fruits and vegetables have a very low environmental impact, though there are some exceptions. According to the Centers for Disease Control and Prevention (CDC), only 1 in 10 people in the United States eats enough fruits and vegetables. Increasing the intake of whole fruits and vegetables is a healthy choice for most people.

**Meat:-** Meat typically has a high environmental impact. Although meat is rich in calories, protein, fats, and micronutrients, consuming a diet high in red meat has been associated with an increased risk of certain medical conditions, including colon cancer. Eating less meat as part of a balanced diet is better for overall health.

**Dairy:-** Milk and other dairy products also have a high environmental impact. However, they are an important and affordable source of key nutrients, such as calcium and vitamin D, for many people. That said, it is possible to reduce dairy intake and still maintain good health. People can talk with a doctor or dietitian about getting enough nutrients, or they can read about nondairy sources of calcium in this article.

**Fish:-** Fish generally has a high environmental impact, too. Many fish stocks are now depleted due to overfishing and other unsustainable practices. However, fish is also a good source of key nutrients and healthy fats. Reducing fish consumption or eating from sustainable sources can help reduce the environmental impact.

**Packaged foods:-** Packaged foods contribute to waste and plastic use. Many packaged foods are also processed, such as sugary snacks, and they may provide little dietary nutrition as a result. Reducing or eliminating packaged food can help a person reduce waste and contribute to their overall health.

Sustainable energy is an important aspect of sustainability and a crucial component of human development. The use of energy is growing and becoming more diverse. Numerous environmental impacts are associated with energy systems, and energy plays a significant role in living standards and

economic development. The transition to sustainable energy depends on several conditions, including obtaining sustainable energy resources, employing advantageous energy carriers, increasing energy efficiency, mitigating the lifetime environmental impact of energy systems, and addressing nontechnical issues such as living standards and lifestyles, economics and affordability, and societal acceptability.

### **AIMS OF SUSTAINABLE HEALTHY DIETS**

Sustainable Healthy Diets are dietary patterns that promote all dimensions of individuals' health and wellbeing; have low environmental pressure and impact; are accessible, affordable, safe and equitable; and are culturally acceptable. The aims of Sustainable Healthy Diets are to achieve optimal growth and development of all individuals and support functioning and physical, mental, and social wellbeing at all life stages for present and future generations; contribute to preventing all forms of malnutrition (i.e. undernutrition, micronutrient deficiency, overweight and obesity); reduce the risk of diet-related NCDs; and support the preservation of biodiversity and planetary health. Sustainable healthy diets must combine all the dimensions of.

### **WHO recommendations**

Between 1996 and 2019, WHO developed or updated more than 50 nutrition guidelines or recommendations, some of which concern population intakes of particular nutrients. Nutrition guideline development is a challenging process reflecting the inherent limitations of scientific research on the links between diet and health as well as methodological factors. The fact that people eat foods and diets rather than individual nutrients – and that diets are made up of many separate, interdependent components — complicate the ability to attribute risk to specific components of diets, and set nutrient-specific guidance. Since 2010, WHO has used the Grading of Recommendations Assessment, Development and Evaluation (GRADE) methodology for guideline development, and evidence on nutrition is assessed by the WHO Nutrition Guidance Expert Advisory Group (NUGAG). This methodology provides a structured framework for assessing the quality of evidence while ensuring that processes and judgements are transparent

Current WHO recommendations for a healthy diet based on NUGAG work to date and prior expert consultations or reports on diet and disease are as follows:

- Exclusively breastfeed babies for the first 6 months and continue breastfeeding until 2 years and beyond.
- Energy intake should balance energy expenditure.
- Keep total fat intake to less than 30% of total energy intake, with a shift in fat consumption away from saturated fats to unsaturated fats, and towards the elimination of industrial trans fats.
- Limit intake of free sugars to less than 10 percent (or even less than 5 percent) of total energy intake.
- Keep salt intake to less than 5 g/day.
- Eat at least 400g of fruits and vegetables a day.

### **Dietary pattern evidence for defining whole diets**

Dietary patterns can be defined as “the quantities, proportions, variety, or combination of different foods, drinks, and nutrients (when available) in diets, and the frequency with which they are habitually consumed Compared to separately identified foods, characteristics of foods, or nutrients as reflected in WHO guidance and GBD Study findings, dietary patterns are more authentic regarding what people eat,

and theoretically more relevant to identifying NCD risk. Separate dietary factors, even when constructed or aggregated for concurrent consideration, cannot account for the complexity of individual foods and their interdependence within dietary patterns in terms of health effects. From a nutrient exposure perspective, there are synergies among the nutrients present in dietary patterns and their bioavailability is influenced by the physical structure of the food matrices within which nutrients are found. From a food exposure perspective, there are synergies among the foods present in dietary patterns ], and the degree of processing of a food can influence its physical and chemical characteristics and subsequent health. Studies of food and health relationships have consistently highlighted associations between low intakes of plant-based foods as well as high intakes of animal products and ultra-processed foods, and poor health outcomes. These findings point to plant- versus animal-based diets and degree of food processing as priority characteristics for analysing dietary patterns in the context of sustainability considerations. The WHO NUGAG review of the evidence on this issue, pending at the time of the consultation, may provide for definitive recommendations on the importance of this issue from a health outcomes perspective.

Dietary patterns across the world have seen a rapid shift from plant-based diets to diets with a higher proportion of energy from animal-source foods, added sugars and fats ,and other foods of high energy density and minimal nutritional value Shaping consumer food choices towards more sustainable healthy diets requires a coherent policy package that will take behaviours, economics and food environment issues into account. We examine how the personal food system, sociocultural factors, cost and affordability, and the food environment influence food patterns.

### **The personal food system**

Individuals decide on multiple food choices each day. These choices are influenced by many factors, including genes, learned experiences with food, and the broader physical, social and cultural environment The decision-making process may involve value judgments and deliberate choices as well as rules and routines that are closely linked to food behaviours. The personal food system interacts with, and is influenced by, sociocultural factors, food cost and affordability, and the food environment.

### **Socio cultural aspect of food patterns and food choice**

Sociocultural aspects of food include both physical world and cognitive elements that shape food patterns Cognitive elements refer to symbols, meanings, values, and expressions of personal and social identity. Food choice values refer to a range of aspects, from a food's attributes, food procurement or food preparation, to goals related to how we live and interact with others. Food choice values are culturally useful because they help individuals and groups negotiate and simplify choice. Sociocultural aspects of food choice are analysed in detail by the food industry but are underused in policymaking. Ethnographic surveys and various classification tools can be used to broadly define food cultures, and identify shared practices and food choice values. Connecting food practices and values with symbols and narratives can encourage new norms for how we grow, procure and enjoy our food. Other sociocultural factors that influence food choice are gender, religion and food prohibitions Gender expresses many of the cognitive elements and food practice norms, such as food selection and food access Food production, acquisition, preparation, cooking and disposal are gender-specific tasks. Food also serves important functions in religious practice, and religion defines food practices through various rules, symbols and meanings. Cultural prohibitions towards foods may apply to individuals based on their age, sex or social

position, and there is significant intra-cultural diversity with regards to the food prohibitions. Analysis of potential policy options should consider discrimination based on religion or gender, especially in deployment of taxes or other restrictive measures on animal-source foods.

### **Cost and affordability**

Socio cultural aspects of food choice notwithstanding, people generally eat what they can afford. Affordability is a relative concept that encompasses the market price of a food in relation to other household expenses and household income. Other costs that merit consideration are the food preparer's time and effort and cost of fuel and water. Nutritious foods are more expensive than energy-dense foods. This relationship holds in both high-income and low- and middle-income countries, and poverty constrains access to healthy foods. Insofar as 'easy to cook' foods reduce effort or save water or fuel, affordability and convenience remain important considerations in economic access to nutritious foods by low-income groups worldwide.

### **Platforms to support policy action**

The policy process consists of analysis, decision-making, implementation and monitoring. In recent years, two platforms have emerged to assist policy makers with comprehensive assessments and decision-making for nutrition (World Food Programme - Fill the Nutrient Gap) and food environments (International Network for Food and Obesity/noncommunicable diseases (NCDs) Research, Monitoring and Action Support - INFORMAS). The Fill the Nutrient Gap deploys a nutrition situation analysis to identify and prioritize strategies to increase availability, affordability and choice of nutritious foods. The INFORMAS approach assesses the implementation of food environment policies compared to international best practice to derive concrete priority actions to strengthen implementation.

### **Food environments**

Food environments are places where food is acquired or consumed. As such, the food environment represents the nexus of interactions between the individual and those aspects of the food system that are related to food production, processing, transportation and retail, and food disposal and waste. In the last 40 years, we have witnessed a dramatic change in food environments to one that supplies higher food energy (calories) and offers more out-of-home eating options. The food environment structure further accentuates the socio-economic inequality in access to nutritious foods. Low purchasing power of low-income neighbourhoods means that most foods offered and advertised are low-cost, energy-dense foods of minimal nutritional value. Food placement and prominence in retail settings also influence food purchases and sales.

The issue of sustainability has been of great natural, social and economic concern. In the face of growing global population, there is an ardent need to focus specially on sustainability issues arising from food systems. Sustainability is a combination of economic (profit), ecological (planet) and social (people) concern. According to Drewnowski, (2017), Sustainable food consumption involves consuming nutrient-dense, affordable and culturally acceptable foods while sparing the environment. This is to say that the concept of sustainable food consumption can be seen from four domains namely dietary, socio-economic, cultural and environmental. The dietary domain places emphasis on nutrients and energy levels, the economic domain dwells on food affordability, the cultural domain emphasizes socially



acceptable food while the environmental domain dwells majorly on Green House Gas Emissions (GHGEs), also called carbon foot print.

Even the government has shown greater levels of interest in this area, thus, the Sustainable Development Goals (SDGs) which has four out of the seventeen elements talking of food, health and sustainable consumption. For instance, SDG 2 says Zero hunger, SDG 3 emphasizes Good Health and Well being, SDG 6 proposed Clean Water and sanitation and SDG 12 emphasized Responsible Consumption and Production (United Nations Development Program, 2015). This is to say that sustainable consumption stemmed from sustainable development. Ever since the emergence of the United Nations Sustainable Development Goals (SDGs), every nation has keyed into it and made frantic deliberate effort towards its actualization, developing economies not left out.

According to Erokin(2007), the government seeks to ensure the sustainability of the food supply and increase the well being of people especially those with a low income. He however noted a fluctuating influence of various internal and external factors. Most developing economies have witnessed recession and high inflation rates in recent times which have led to rising cost of foods, more so, sustainable products. GFK (2007) noted that organic products are more expensive than its conventional equivalent. Rising price of food has also been seen to create serious difficulties for vulnerable low income households that spend a substantial proportion of their income on food. He also noted that over 2 billion people in the developing part of the world spend up to 70% of their disposable income on food. However, Nigeria just like most African countries has a percentage of individuals with low remuneration than the stipulated European Union average.

There are three major parameters that characterize food markets in developing economies. One of such is macro economy (the volume and dynamic of GDP and agric production). Another is the unemployment level, income of the population and then import and export. GDP determines the standard of living of the population. It is assumed that the GDP of a nation determines what they consume or don't consume. When considering the influence of economic factors on food consumption, two factors are of paramount importance. These are income and price (Deaton and Muellbauer, 1980). It could be argues that income is a personal factor. However, for most people, individual incomes are determined by general economic conditions and therefore, it is discussed as environmental factor. Both factors have been found to affect quantities and types of food bought by consumers.

Food is the most basic necessity of life. Every human being needs a minimum amount of it for existence and a balance diet to maintain sound health. But unfortunately, where there are availability issues there is a great deal of deprivation and ignorance among the rural masses about a balanced diet. Normally this leads to various health problems, which ultimately affects the economic growth and prosperity of a country. Food consumption is a dynamic process and is greatly influenced by size and composition of household, number of earning hands, prices of food items, educational level, geographical, cultural and climatic conditions in the region, etc.

### **Policy implications:**

- Several crucial elements are highlighted in this study to guide policies toward sustainable development based on long-run estimates.
- It is possible to select measures that target short-term objectives, even though they have negative long-term consequences, without an adequate framework for assessing the effects of policies on different types of resources.

- Manufactured, natural, human, and social capital will work together to improve welfare in the long run, even if short-term trade-offs

### Summary:

Although a multitude of factors influence dietary patterns, there are many tools and strategies to support analysis, prioritization of solutions, and evidence-informed decision-making. In the socio cultural domain, we suggest ethnographic modules in national food surveys to characterize cognitive elements of food culture by subgroups. These data can inform campaigns for shifting norms and making foods more desirable and enjoyable. In the affordability domain, various analyses and metrics can identify which foods are both nutritious and affordable, as well as assist in identifying strategies to improve access to affordable, nutritious choices. In the food environment domain, policy actors can deploy various instruments that guide and support choices for sustainable healthy diets. Long-term monitoring of the impacts of these actions is needed. Most critically, cross-sector collaboration among businesses, policy makers, citizens, and academics is needed to shift food patterns and food choices towards health and sustainability.

### Conclusion

Socio-economic factors have been seen to have significant effect with sustainable food consumption in developing economies. The findings from this research work are in consonance with previous studies which has been reviewed earlier in this study. The importance of socio economic factors in sustainable food consumption cannot be neglected. The price of sustainable products greatly influences its consumption. Further, social groups such as friends, family, institution and peers influences sustainable food consumption. The prices of substitute product will also affect consumption of sustainable foods. This is because consumers will prefer a substitute product especially if it has a lesser price. Education also was seen to play a major role in sustainable food consumption. Education enhances literacy and makes one understand the nutritional value, concept and idea behind consumption of certain foods. Income also enables purchase and consumption of sustainable foods.

It may be concluded from this study that to meet the growing demand for food commodities of an increasing population, where there is a need to enhance production, the need to develop processing and marketing facilities can not be ignored for better management of the essential food commodities. This indeed would provide better employment and investment opportunities and to raise the income of rural communities in the country. This would go a long way to improve the standard of living in the rural area restricting the migration trend towards big cities in search of better life for the household. Hence a two prong strategy is recommended that while developing production and marketing facilities would improve food availability as well as indirectly would provide better income opportunities to the local people.

### References

1. Akpan, S.B; Patrick,I.B; Udoka, SJ and Okon, U.E (2013). Determinant of Food Consumption Expenditure among Agro based Firms Workers in Southern Nigeria: Simultaneous Equation Approach. Asian Journal of Agricultural Extension, Economics and Sociology, 2(1)
2. Ali, M. 2008. An investigation in food consumption pattern of rural and urban areas of district Swat, M.Sc. (Hons) Thesis KP Agricultural University Peshawar.

3. Drewnowski, A. (2017). Sustainable Healthy Diets: Models and Measures. Springer International Publishing DOI 10.1007/978-3-319-55942-1-2
4. Erokin, V (2007). Approaches to Sustainable Rural Development in a Pre-Dominantly non-Rural Region. *Journal of Economics Agriculture* 2(6)
5. HLPE (2014). Food Losses and Waste in the context of Sustainable Food Systems. A report by the high level panel of Experts on Food Security and Nutrition of the Committee on World food Security, Rome.
6. Kain, J;Vio, F., and Albala, C (2003). Obesity Trends and Determinant Factors in Latin America. *Cad Souda Publica*
7. Moreira, P and Padrao, P.D (2004). Educational and Economic Determinants of Food Intake in Portugese Adults : A Cross Sectional Study. *BMC Public Health*, 4(58)
8. UNDP (2015). World Economic and Social Survey. The Great Green Technological Transformation. United Nations Department of Economic and Social Affairs: New York.
9. WHO. 2018. Malnutrition. Key Facts. Updated 16 February 2018. [Cited 02 October 2019]. <https://www.who.int/news-room/fact-sheets/detail/malnutrition>.
10. WHO. 2014. Handbook for Guideline Development (2nd ed). Geneva: World Health Organization.
11. WHO. 2018. Healthy diet. Factsheet 394. [Cited 02 October 2019] <https://www.who.int/nutrition/publications/nutrition>.