

## Chapter 54

# Agricultural Trade and Quality of Nutrition: Impacts on Undernourishment and Dietary Diversity

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### **ABSTRACT**

*Proper nutrition is not only a biological but also a social, economic, and political issue. Insufficient intake of essential elements may result in the occurrence of hidden hunger and metabolic disorders. Some regions of the world are characterized by a lack of certain nutrients in the environment which leads to their lack in plant and animal products. The most common problem is a deficiency of iodine and selenium. To solve this problem, the government takes various measures, such as direct inclusion of necessary additives in food products, as well as the modernization of technological process of crop and livestock production. In this chapter, the authors analyze the provision of the population in various countries and regions with limiting nutrients. The study specifically aims at exploring the issues of production and trade in fortified (modified) food products that can directly fill in the lack of essential elements in particular territories.*

### **INTRODUCTION**

One of the important challenges faced by the world community today is the question of providing a sufficient amount of affordable, high-quality, and safe food to the growing population of the planet which is expected to reach ten billion by 2050. This must be done against the background of the growing shortage of fresh water and land suitable for agricultural use, soil degradation, and the reduction of biological diversity. The ongoing climate change aggravates food insecurity problem. Achieving food

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security requires an integrated approach that takes into account all existing forms of undernourishment of the population, as well as the stability and efficiency of production of agricultural goods and food products and international trade in food.

## **BACKGROUND**

In 2018, about 113 million people in 53 countries around the world experienced severe food shortages. Despite the fact that the number of people confronted with food crises has slightly decreased, the total number of people who do not receive adequate nutrition is still above 100 million. In addition, over the past three years, the scope of countries and continents that have been engulfed by the food crisis has increased. Nearly two-thirds of the total number of people experiencing acute hunger inhabit eight countries: Afghanistan, the Democratic Republic of Congo, Ethiopia, Nigeria, Sudan, South Sudan, Syria, and Yemen. In 17 countries, number of people experiencing acute hunger either remained the same or increased (Food and Agriculture Organization of the United Nations [FAO], International Fund for Agricultural Development [IFAD], United Nations International Children's Emergency Fund [UNICEF], World Food Programme [WFP], & World Health Organization [WHO], 2018).

Proper nutrition is not only a biological but also a socio-economic, as well as political issue. A balanced diet is an essential condition for public health. To maintain the normal flow of energy and plastic and catalytic processes in the body, a certain amount of nutrients is required. Some of these substances can be synthesized in the body, but a large proportion of them are obtained from the outside with food and thus is indispensable. A balanced diet provides the optimal ratio for the human body in the daily diet of proteins, fats, carbohydrates, and biologically active substances.

The recommended ratio of carbohydrates, proteins, and fats is 4:1:1, respectively. Proteins are of paramount importance for vital activity. Without them, life, growth, and development of a body are impossible. It is a plastic material for the formation of cells and intercellular substance. Proteins are constituents in hormones, immune bodies, and enzymes. They are involved in metabolism of vitamins and minerals and delivery of oxygen, lipids, carbohydrates, vitamins, hormones, and drugs by blood. The earliest manifestation of protein deficiency is the reduction of protective properties of an organism in relation to the action of adverse environmental factors. With a lack of proteins, the processes of digestion, blood formation, and activity of the endocrine glands and nervous system are disturbed, the growth and development of an organism are inhibited, the mass of muscles and liver is reduced, and trophic disorders of the skin appear.

Fats supply a body with energy, polyunsaturated fatty acids, phospholipids, and sterols. Insufficient intake of these substances may result in the impairment of the function of central nervous system, skin, kidney, and organs of vision, as well as to a decrease in the body resistance.

Carbohydrates are the main source of energy. They are necessary for ensuring metabolism. Carbohydrates stimulate absorption of proteins, contribute to normal activity of liver, muscles, nervous system, heart, and other organs.

Functioning as biological regulators of metabolism and constituents of enzymes, vitamins provide normal course of biochemical and physiological processes in a body.

Minerals are vital to human body and, along with other food components, are an essential part of the diet.

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