



Improving Nutrition through Agriculture and Food Systems

Why does nutrition matter?

Text-only version

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Learning objectives

By the end of this lesson you will:

- be aware of the major nutrition problems in the world and their consequences on human, social and economic development; and
- know what this course offers and how it is organized.

Introduction


“ Welcome to this course on **nutrition-sensitive agriculture and food system policies and programmes**. – Jaden, your course guide ”


Why this course?

Historically, the focus of agricultural development and food security programmes has been on increasing production and productivity. Insufficient attention was paid to improving the connections between agriculture and nutrition. Since a few years, however, there has been a growing consensus on how the nutrition impact of agriculture and food system policies and programmes can be enhanced. Through this course, you will learn how to make agriculture and food system policies and programmes nutrition-sensitive for a greater impact on nutrition.

This course has been developed by FAO through a **multi-stakeholder consultative process**, which has involved practitioners, experts and researchers from governments, academia, UN agencies, NGOs and development partners.

With **Marta** and **Erik**, other two course guides, we will learn together how nutrition can be integrated into agriculture and food system programming and policy work.

 **Marta** “I’m supporting smallholders to increase their income and get out of poverty by designing and implementing programmes.

 **Erik** I am chief of the Food Production Department of the Ministry of Agriculture. I am in charge of the National Food Security policy.

This lesson will address their common question: *Why should we do more on nutrition?*

The nutrition situation

➔ Global outlook

How many people do you think are affected by malnutrition?

Malnutrition in all its forms affects almost one **in three people** on the planet.

159 million children under 5 suffer from **stunting** (chronic malnutrition).

51 million children under 5 suffer from **acute malnutrition**

Over **2 billion people** worldwide are deficient in key **vitamins and minerals**.

Obesity affects 600 million adults worldwide (13% of adult population) **42 million children** under five are **overweight** or **obese**.

Many countries are currently facing the **double burden of malnutrition** sometimes **coexisting** at **household** or **individual level**

Reducing malnutrition is one of the major challenges of the 21st century

➔ Stunting

While the number and proportion of stunted children have decreased significantly the rate of this reduction widely differs throughout regions.

Prevalence of stunting [Source: UNICEF/WHO/World Bank 2015]


1990 ➔ 255 million [39.6%]

2014 ➔ 159 million [23.8 %]

Latin America and Caribbean (LAC)	24.5 %	11.7 %
Asia	47.6 %	25.1 %
Oceania	35.9 %	38.1 %
Africa	43.3 %	32 %
47 million	▲ 58 million	
1990	2014	
	1990	2014

Furthermore, due to demographic growth, the **absolute number** of stunted children has increased in Africa and overweight ¹children has **increased in all regions**.

Number of overweight children (million)	Source: UNICEF/WHO/World Bank 2015	
Latin America and Caribbean (LAC)	3.7	3.9
Asia	16	19.6
Oceania	0.03	0.12
Africa	5.4	10.3
	1990	2014

 Jaden, the course guide

“Despite the fact that the number of stunted children worldwide has decreased, malnutrition in all its forms has been increasing and continues to represent a major public health challenge.”

How widespread is the problem?

? How many countries have 20% or more children affected by stunting?

In more than 80 countries, at least 20% of the children are stunted. These numbers are unacceptably high and have a severe impact on both the individual and societal levels.

? Which regions do you think are affected by child micronutrient deficiencies?

Africa, Asia, Latin America and the Caribbean, Europe and Oceania are affected by child micronutrient deficiencies. Child micronutrient deficiencies is the most widespread form of malnutrition, affecting many countries in all regions (Africa, Asia, Latin America and the Caribbean, Europe and Oceania). Affected regions are those where 20% or more children are anemic, or 10% or more children are deficient from vitamin A.

? Do you think adult obesity is a public health problem only in high-income countries?

¹ **Overweight and obesity:** Body weight that is above normal for height as a result of an excessive accumulation of fat. It is usually a manifestation of over nourishment. Overweight is defined as a BMI of more than 25 but less than 30 and obesity as a BMI of 30 or more; A body mass index (BMI) >25-30. Source: ICN2 glossary

No, obesity concerns many countries at different levels of income. Overall, the number of obese individuals is increasing dramatically worldwide, alongside with the rise of diet-related non-communicable diseases. Obesity is considered a public health problem when the percentage of adult who are obese is 20% or more.

The diagram below gives you a comprehensive picture of how widespread is malnutrition² throughout the world. As you can see, obesity and undernutrition (stunting and micronutrient deficiencies) coexist in many countries, as often named the double burden of malnutrition.

CHILD MICRONUTRIENT DEFICIENCIES

Source: FAO SOFA (2013)

CHILD STUNTING

Africa: Angola, Benin, Botswana, Burkina Faso, Burundi, Cameroon, Central African Republic, Chad, Comoros, Congo, Democratic Republic of the Congo, Cote d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritania, Mozambique, Namibia, Niger, Nigeria, Rwanda, Sao Tome and Principe, Senegal, Sierra Leone, Somalia, Sudan, Togo, United Republic of Tanzania, Uganda, Zambia, Zimbabwe

Asia: Afghanistan, Bangladesh, Bhutan, Cambodia, India, Indonesia, Democratic People's Republic of Korea, Lao People's Democratic Republic, Maldives, Mongolia, Myanmar, Nepal, Pakistan, Papua New Guinea, Philippines, Tajikistan, Turkmenistan, Timor-Leste, Viet Nam, Yemen

Latin America and the Caribbean: Bolivia, Haiti, Honduras

Africa: Egypt, Libya, South Africa, Swaziland

Asia: Armenia, Azerbaijan, Iraq, Syrian Arab Republic

Europe: Albania

Latin America and the Caribbean: Belize, Ecuador, El Salvador, Guatemala

Oceania: Nauru, Solomon Islands, Vanuatu

Africa: Algeria, Morocco

Asia: Brunei Darussalam, China, Kyrgyzstan, Malaysia, Sri Lanka, Thailand, Uzbekistan

Europe: Estonia, Romania

Latin America and the Caribbean: Brazil, Colombia, Guyana, Paraguay, Peru

Africa: Tunisia

Asia: Georgia, Iran, Jordan, Kazakhstan, Kuwait, Lebanon, Oman, Saudi Arabia, Turkey, United Arab Emirates

Europe: Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Latvia, Lithuania, The Former Yugoslav Republic of Macedonia, Russian Federation, Serbia, Slovakia, Ukraine

Latin America and the Caribbean: Argentina, Chile, Costa Rica, Cuba, Dominica, Dominican Republic, Jamaica, Mexico, Panama, Suriname, Trinidad and Tobago, Uruguay, Venezuela

Oceania: Samoa, Tuvalu

Asia: Cyprus, Israel - **Europe:** Andorra, Czech Republic, Germany, Hungary, Iceland, Ireland, Portugal, Luxembourg, Malta, Slovenia, Spain, United Kingdom - **Northern America:** Canada, United States of America - **Oceania:** Australia, New Zealand

ADULT OBESITY

² **Malnutrition** - An abnormal physiological condition caused by deficiencies, excesses or imbalances in energy and/or nutrients necessary for an active, healthy life. Malnutrition includes undernutrition and overnutrition as well as micronutrient deficiencies. Source: ICN2 glossary

Impact of malnutrition on individuals, society and economy

Malnutrition has a real, critical impact on individuals. Without good nutrition, the body and brain cannot develop and function well. In most severe cases, malnutrition is a life-threatening condition.

Impact of malnutrition at the individual level

➡ Higher morbidity and mortality risk

Undernutrition progressively erodes the functioning of the immune system, thus making the body more susceptible to infections and diseases. In turn, diseases reduce the ability of the body to process food into energy ("secondary malnutrition"). This negative feedback loop between malnutrition and diseases can lead to premature death or permanent physical and mental damages. Overweight and obesity increases the risk of non-communicable diseases (NCDs), which is also a major cause of premature death.

➡ Permanent physical damages

Inadequate nutrition hampers healthy physical growth, proper organ formation and function, and weakens the immune system. Especially if experienced in the first two years of age, undernutrition can cause permanent physical damages such as growth faltering. Other physical impairments include, for instance, night blindness in the case of vitamin A deficiency; low haemoglobin and fatigue in the case of iron deficiency; goiter and thyroidal diseases in the case of iodine deficiency.

➡ Cognitive development failure

Cognitive development can be delayed and even irreversibly impaired in children who have suffered from undernutrition for a considerable length of time. Undernutrition undermines children's ability to learn and to maintain attentiveness. Children who were undernourished before the age of five are more likely to underperform, repeat grades and even drop out of school.

➡ Intergenerational transmission of malnutrition

Malnutrition is a process, with consequences that may extend not only into later life, but also onto future generations. The process of becoming malnourished often starts in utero and may last, particularly for girls and women, throughout the life cycle. It can also span multiple generations. A stunted girl is likely to become a stunted adolescent and later, a malnourished woman. Besides posing

threats to her own health, poor nutrition increases the chances that her child will be born malnourished, meaning with a low birth weight (less than 2,500g). And so the cycle continues. Moreover, children who have suffered from malnutrition in their early ages have higher probability of experiencing overweight, obesity and non-communicable diseases in adulthood, due to impaired bodily functions.

Impact of malnutrition at the societal level

➡ Higher health expenditure

Treatment of malnutrition in all its forms and of related diseases (including diet-related non-communicable diseases and communicable diseases) adds a very high burden on the public health system, in terms of extra demand for health care. In most cases, the monetary cost of treating a severely underweight child outweighs the cost of a preventive intervention.

➡ Higher education expenditure

66 million primary school-age children attend classes hungry across the developing world. This undermines their ability to learn and to maintain attentiveness. School children underperformance, incremental grades of repetition and drop-outs are costly to the education system, in terms of extra demand for educational services.

➡ Lower productivity and growth

Countries with a high percentage of their working-age population that has suffered from stunting in its childhood have lower rates of productivity and growth. Malnutrition indeed impairs individual physical and mental capacities, and leads to reduced potential of the workforce and work productivity. The higher mortality risk related to malnutrition can also impact the workforce size.

➡ Higher public assistance needs

Malnutrition has also a critical impact on society and economy. Without good nutrition, the long-term economic and societal development of countries is strongly compromised.

Malnutrition reduces people's ability to engage in income generating and social activities, consequently increasing poverty and social exclusion. This creates an extra burden on states in terms of increased needs for public assistance (e.g. food aid, unemployment benefits, social protection). In addition, the intergenerational transmission of malnutrition results in an intergenerational transmission of poverty.

Malnutrition can account for up to 16,5% of GDP loss. According to the initial results of the Cost Of Hunger in Africa study conducted in 4 pilot African countries, the losses below are incurred annually as a result of child undernutrition.

GDP loss split in health and education costs, and loss in productivity

Ethiopia -- \$ 4.7 billion 16.5 % GDP

Uganda -- \$ 899 million 5.6 % GDP

Swaziland -- \$ 92 million 3.1 % GDP

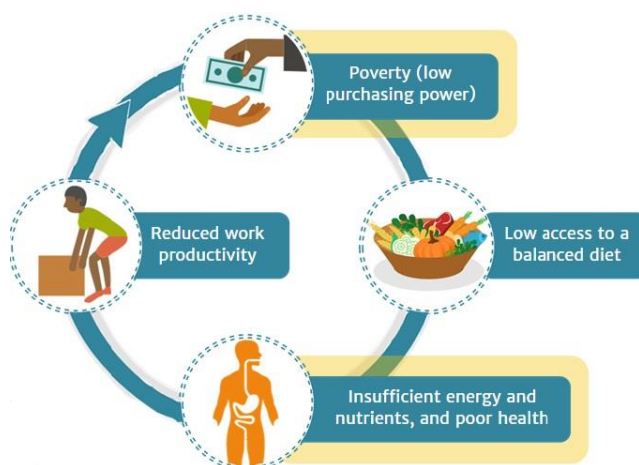
Egypt -- \$ 3.7 billion 1.9 % GDP

Source: African Union Commission et al. (2012)

« Cutting hunger and thereby achieving food and nutrition security in Africa is not only one of the most urgent means of reducing the vulnerability and enhancing the resilience of national economies, but also one of those which produces the highest returns for broader social and economic development. »

Malnutrition and poverty

As seen, malnutrition leads to greater poverty. Conversely, poorest households are the most at risk of malnutrition. There is therefore a **vicious cycle between poverty and malnutrition**.



Poor people have less purchasing power to access adequate quantities of nutritious foods in order to meet their energy and nutrient needs for good health. Bad health reduces work productivity and the opportunity to escape from poverty.

So, why this course?

Although some progress has been made in reducing malnutrition, **more needs to be done to combat malnutrition** in all its forms. And this is not only a matter for nutritionists. We can all contribute, and as you will see in the next lessons, **the food and agriculture sector can play an important role**. Agriculture and food system policies, investments and programmes can help reduce malnutrition. At the same time, integrating nutrition can help improve the outcomes of the agriculture and food systems.

In this course you will thus explore how your work is linked to nutrition, what is the added value that nutrition brings to your work on agriculture and food systems, and what opportunities exist to maximize the linkages between the two.

How is the course organized?

⇒ How does the food system influence nutrition?

As professionals working in food security and agriculture, what can we do to improve nutrition?

By analyzing two illustrative scenarios, this lesson offers you the opportunity to unpack the linkages between nutrition and the food system. You will realize the great potential that agriculture and food systems have in addressing many causes of malnutrition. You will also appreciate the need to work with other sectors in order to properly address malnutrition.

⇒ Making agriculture and food systems nutrition-sensitive: key principles

Policies, investments and programmes related to agriculture and food systems can play a strong role in preventing and reducing malnutrition, provided that they are conceived in a nutrition-sensitive way. This lesson clarifies the meaning of the term "nutrition-sensitive". It also presents a series of Key recommendations formulated by FAO in consultation with a broad range of partners to support the work of programmers and policy makers.

⇒ Making agriculture and food systems nutrition-sensitive: key interventions

How to translate key recommendation to nutrition-sensitive interventions? Fortunately, we are not starting from scratch as many experiences in this area already exist. In this lesson you will be invited to embark on a world tour that looks at a broad range of nutrition-sensitive interventions in agriculture and food systems. You will also look at some real case-studies and have the opportunity to apply the newly acquired ideas to the two illustrative scenarios.

⇒ A conducive international environment for nutrition

There is a real international and regional commitment dedicated to eradicating malnutrition, in all its forms, through a growing number of initiatives and actions. In this lesson, you will become aware of the key initiatives, high-level events, commitments, movements and partnerships on nutrition and food security, at global, regional and country level, within the last couple of years. At the end, you might come up with some ideas on how to prioritize your activities within this international environment.

Summary

Malnutrition, in all its forms, is **everywhere**: it affects almost all countries; forms and prevalence of malnutrition differ across countries.

Undernutrition and overweight/obesity coexist in many countries, sometimes even in the same community, household or even individual. This is also referred to as the **double burden of malnutrition**.

Progress in combating malnutrition is mixed and uneven: stunting rates are dropping but 159 million children around the world are still affected; obesity rates are on the rise in all regions.

Good nutrition has a **critical impact** on individual and societal development. Malnutrition can cause important GDP losses to countries and hinder countries' **economic growth**.

There is a **vicious circle** between poverty and malnutrition, whereby malnutrition leads to greater poverty and poverty increases the likelihood of suffering from malnutrition.