

Session

**Forum:** Economic and Social Council

**Issue:** The Question of Sustainable Agriculture

**Student Officer:** Mr. Abubaker Amin

**Position:** President

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## Introduction

The question of sustainable agriculture has become a very widely discussed topic after the 1980s. Agriculture is the largest user of land and water resources in the world, yet millions of farmers live in poverty. Pasture and cropland occupy around 50 percent of the Earth's habitable land and provide habitat and food for a multitude of species. It is also the world's largest industry. It employs more than one billion people and generates over \$1.3 trillion dollars worth of food annually<sup>1</sup>. It is crucial to sustainably manage agricultural operations as they can preserve and restore critical habitats, help protect watersheds, and improve soil health and water quality.

The problem we are facing is that there is not simply enough land or water supply to feed our ever expanding population. Agriculture's deep connections to the world economy, human societies and biodiversity make it one of the most important frontiers for conservation around the globe. Sustainable agriculture is also included in the Sustainable Development Goals (SDGs).

Concerns about sustainability in agricultural systems mainly focus on the need to develop technologies and practices that have no harmful effects on the environment and services, are accessible to and effective for farmers, and lead to improvements in food productivity. Even though there have been made great strides towards better agricultural productivity in the past half-century, with crop and livestock productivity strongly driven by increased use of fertilizers, irrigation water, agricultural machinery, pesticides and land, this is an issue that still remains unsolved<sup>2</sup>. The World Resources Institute (WRI) report on Creating a Sustainable Food Future estimates that we need about 70% more food in 2050 than we

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<sup>1</sup> <https://www.worldwildlife.org/industries/sustainable-agriculture>

<sup>2</sup> <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2610163/>

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have today in order to provide every one of the 9.6 billion world population with a daily intake of 3,000 calories<sup>3</sup>.

Sustainable agriculture starts with soil enrichment. Soil is one of the most important elements of agricultural ecosystems. Healthy soil flourishes with plenty of beneficial microbes and insects. On the contrary, soils that aren't sustainable frequently require heavy fertilization in order to produce high yields<sup>4</sup>.

## Definition of Key Terms

### Sustainable Development Goals (SDGs):

"They are a collection of goals to end poverty, protect the planet, and ensure prosperity for all"<sup>5</sup>, adopted by the United Nations Member states on September 25th 2015, as part of a new sustainable development agenda. Each goal outlines specific targets and standard to be achieved worldwide by 2030.



### Biodiversity

The variety and variability of life on Earth.

<sup>3</sup> <https://www.wri.org/publication/creating-sustainable-food-future-interim-findings>

<sup>4</sup> <http://www.aketta.com/blog/sustainable-agriculture-the-history-you-need-to-know-that-s-shaping-the-future.aspx>

<sup>5</sup> <http://www.undp.org/content/undp/en/home/sustainable-development-goals.html>

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### **Fertilizers**

Any material of natural or synthetic origin that is applied to soils or to plant tissues to supply one or more plant nutrients essential to the growth of plants.

### **WRI**

A global research non-profit organization that was established in 1982 with funding from the MacArthur Foundation.

### **Ecosystem**

A community made up of living organisms and nonliving components.

## **Background**

A staggering amount of countries face different forms of malnutrition, including stunting, wasting, underweight, micronutrient deficiencies, overweight and obesity, which may coexist within the same country, household or individual. In the coming 35 years, agriculture will face a 30 percent increase in the global population, intensifying competition for increasingly scarce land, water and energy resources, and the existential threat of climate change. In order to be able to provide for a population projected to reach 9.3 billion in 2050, estimates are that food production will need to increase from the current 8.4 billion tonnes to almost 13.5 billion tonnes a year<sup>6</sup>. Experts of sustainable agriculture want to integrate three objectives into their work: a healthy environment, economic profitability, and social and economic equity.

The modernization of agriculture has created many environmental concerns. Every year more than a billion tons of topsoil erode from the nation's farmlands. When erosion is caused by run-off, the fertilizer, pesticides, and herbicides carried with the soil can corrupt watersheds and disrupt ecosystems. Water quality has become an issue, and agriculture's reliance on irrigation has added to water scarcity. Heavy reliance on fossil fuel has made agriculture an industry with one the highest levels of carbon emissions. Deforestation in order to develop new farmland can have negative environmental impacts for example loss of biodiversity.<sup>7</sup>

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<sup>6</sup> <http://www.fao.org/sustainability>

<sup>7</sup> <http://nationalaglawcenter.org>

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The current agricultural revolution with all its attributes, in particular its heavy, complex and very expensive motorized mechanization, has not extended far beyond the developed countries, with the exception of small portions of Latin America, North Africa and South Africa and Asia.<sup>8</sup>

## Key member states and NGOs

### FAO

FAO's (Food and Agriculture Organisation of United Nations) vision for Sustainable Food and Agriculture was developed in support to its Strategic Objective 2 "Make agriculture, forestry and fisheries more productive and more sustainable". It is a vision of a world in which food is nutritious and accessible for everyone and natural resources are managed in a way that maintain ecosystem functions to support current as well as future human needs<sup>9</sup>.

### WWF

WWF is dedicated to building innovations for sustainability. They support producer improvement projects for priority food crops and promote sustainable supply chain solutions for food companies. WWF also engages companies, platforms, sectors and governments to reduce key impacts of food production. This includes convincing priority companies and sectors to use purchases and investments to drive more sustainable food production<sup>10</sup>

### Bangladesh

Agriculture in Bangladesh is under attack as it continues to degrade land and water resources and use harmful agro-chemicals. Mechanisation had benefits, but with it came negative effects, such as soil depletion, water contamination and neglect of conditions for farm laborers.<sup>11</sup>

### India

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<sup>8</sup> <http://www.fao.org/docrep/x4400e/x4400e10.htm>

<sup>9</sup> <http://www.fao.org/sustainability/>

<sup>10</sup> <https://www.worldwildlife.org/initiatives/food>

<sup>11</sup> <https://borgenproject.org/sustainable-agriculture-in-bangladesh/>

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According to the Food and Agriculture Organization of the UN (FAO), it is estimated that over 190 million people go hungry every day in the country. The slow growth of agricultural production in India can be attributed to an inefficient rural transport system, lack of awareness about the treatment of crops, limited access to modern farming technology and the shrinking agricultural land due to urbanization.<sup>12</sup>

## Timeline of Events

Date	Description of event
1992	Acceptance of Biodiversity and Climate Change Conventions as international law, ratified by over 120 countries (1992-1999)
2015	UN Sustainable Development Goals <sup>13</sup>
2016	Agriculture development, food security and nutrition <sup>14</sup>
2017	HLFP Thematic Review of SDG number 2: End hunger, achieve food security and improved nutrition, and promote sustainable agriculture

## UN Involvement, Relevant Resolutions, Treaties and Events

<sup>12</sup><https://www.basf.com/in/en/company/sustainability/future-perfect/stories/How-sustainable-farming-in-India-can-secure-its-food-for-the-future.html>

<sup>13</sup> <http://www.un.org/sustainabledevelopment/sustainable-development-goals/>

<sup>14</sup> [https://unctad.org/meetings/en/SessionalDocuments/a71d283\\_en.pdf](https://unctad.org/meetings/en/SessionalDocuments/a71d283_en.pdf)

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- A/RES/51/171 Food and sustainable agricultural development<sup>15</sup>
- A/RES/71/283 Agriculture development, food security and nutrition<sup>16</sup>
- A/RES/70/472/Add.1 - Implementation of Agenda 21, the Programme for the Further Implementation of Agenda 21 and the outcomes of the World Summit on Sustainable Development and of the United Nations Conference on Sustainable Development<sup>17</sup>
- A/RES/70/472 - Sustainable development: report of the Second Committee<sup>18</sup>
- A/RES/70/478 - Agriculture development, food security and nutrition: Report of the Second Committee<sup>19</sup>
- A/RES/69/313- Addis Ababa Action Agenda of the Third International Conference on Financing for Development (Addis Ababa Action Agenda) <sup>20</sup>
- A/RES/62/190 - Agricultural technology for development<sup>21</sup>
- A/RES/70/1 Transforming our world: the 2030 Agenda for Sustainable Development (25 September, 2015)<sup>22</sup> The Agenda is a plan of action for people, planet and prosperity. It also seeks to strengthen universal peace in larger freedom.

## Possible Solutions

Lack of funding for research is a vital part of finding a solution for how to have sustainable agriculture. With more funding it would be easier to make breakthroughs as currently the funding is at \$4 billion, but for the next wave of research breakthroughs, the FAO has estimated that we will need \$ 45 to \$ 50 billion annual spending globally.

Healthier diets and less food loss and waste must be integral components of future sustainable food systems. Given the diversity of causes involved, solutions for that need to be flexible, targeted, and applied in a local context, with strong government leadership at all levels as well as participation by all key actors along the food chain, including the food industry<sup>23</sup>. The movement towards increased consumption of simple and refined

<sup>15</sup> <http://www.un.org/documents/ga/res/51/ares51-171.htm>

<sup>16</sup> [https://unctad.org/meetings/en/SessionalDocuments/a71d283\\_en.pdf](https://unctad.org/meetings/en/SessionalDocuments/a71d283_en.pdf)

<sup>17</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/70/472/Add.1&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/70/472/Add.1&Lang=E)

<sup>18</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/70/472&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/70/472&Lang=E)

<sup>19</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/70/478&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/70/478&Lang=E)

<sup>20</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/70/478&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/70/478&Lang=E)

<sup>21</sup> [http://www.un.org/ga/search/view\\_doc.asp?symbol=A/RES/62/190&Lang=E](http://www.un.org/ga/search/view_doc.asp?symbol=A/RES/62/190&Lang=E)

<sup>22</sup> <https://sustainabledevelopment.un.org/post2015/transformingourworld>

<sup>23</sup> <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1891642>

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carbohydrates and excessive saturated and trans fats is causing a decline of dietary diversity and health among the poor and rich alike<sup>24</sup>. Ecological efficiency of meat producing is very low as well. Changes have to be made to consumption patterns and the environmental impacts of food production, and so we have to knock some animal products off the menu. Everyone needs to eat, so be it reducing food loss and waste, eating lower-impact diets or investing in sustainable production - countries, companies, and consumers can make a difference.

Agricultural GHG emissions, make up about 25% of global GHG emissions, but there's a lot that can be done to reduce this. By intensifying agriculture on existing land and protecting the remaining forests, we can eliminate emissions from land-use change. And by addressing key emissions from agricultural production – from cows and other ruminants, from fertilizers, and from rice production practices, we can greatly reduce emissions from agricultural production<sup>25</sup>.

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<sup>24</sup> <http://care.diabetesjournals.org/content/34/6/1249.full>

<sup>25</sup> Richard Waite, associate, Food, Forests and Water Program, World Resources Institute

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