

THE PROBLEM OF IMPROVING FOOD SECURITY AND PREVENTING FOOD WASTE TO ACHIEVE SUSTAINABLE DEVELOPMENT

**Lisovska T.O., PhD, Associate Professor
Hamburg University of Applied Sciences (HAW Hamburg), Hamburg,
Germany**

**Kushniruk N.V., Senior Lecturer
Ternopil Ivan Puluj National Technical University,
Ternopil, Ukraine**

According to the "Resolution of 25.10.2017 No. 1106, the Government approved the action plan for the implementation of the Association Agreement between Ukraine, on the one hand, and the European Union, the European Atomic Energy Community and their Member States, on the other hand" Ukraine has committed itself to implementing the necessary changes to approximate Ukrainian legislation to EU law.

Today, the fact that a significant amount of food is produced but not consumed has significant negative consequences, including economic, social and environmental ones. Therefore, the issue of achieving sustainable development is inextricably linked to addressing the priority issue of preventing food waste.

Climate-smart innovations and technologies to reduce food loss and waste are key measures to improve the efficiency and reduce emissions of food systems. As the world's population continues to grow, the challenge should not be how to grow more food, but rather how to reduce food loss and food waste in a sustainable way, which is an urgent issue to address in order to feed more people.

The purpose of the study is to analyse scientific approaches on ways to improve food security and prevent food waste.

Achieving the Sustainable Development Goals of the entire global community is inextricably linked to food security, and this requires the development of new technological measures to prevent food waste in the chain - raw materials, food products - to fill the gaps in the formation of sustainable food policy.

SDG objective 12.3 calls for halving global food waste per capita at the retail and consumer levels, and reducing food losses at all stages of production and consumption and in the supply chain (including post-harvest losses) by 2030. Reducing food loss and waste can also contribute to the achievement of other SDGs, including the Zero Hunger target (SDG 2), which calls for ending hunger, achieving food security and improved

nutrition, and promoting sustainable agriculture. The expected positive environmental impact of reducing food loss and waste will also have an impact on, among others, SDG 6 (sustainable water management) and SDG 13 (climate change).

Food loss and waste potentially affect food security and nutrition through changes in the four dimensions of food security: food availability, access, utilisation and supply chain stability.

It has been established that there are three main types of environmental impacts of food loss and waste that are generally quantifiable: Greenhouse gas emissions (carbon footprint), pressure on land (land footprint) and pressure on water resources (water footprint), which in turn has an impact on biodiversity. Using food loss and waste reduction as a means of achieving the environmental goals set out in the SDGs will require an understanding of where in the food supply chain losses or waste occur, which raw materials are most wasted, and what the environmental impacts are.

The issue of food waste reduction should be approached comprehensively. We propose to consider this issue in a system in which the research begins at the initial stage at the stage of obtaining high-quality and safe raw materials, i.e. in the raw material-food system. The priority of reducing food losses is crucial for the transition to sustainable food systems that will contribute to more efficient use of natural resources, positive impacts on food security and economic development, and environmental sustainability.

Due to the multidisciplinary and multifaceted nature of this issue, the first thing that should be considered in environmentally friendly solutions is the choice of an environmental target to focus on and the identification of the products that have the largest environmental footprint in relation to this target to focus on. Measuring food waste and developing methods to reduce it is essential to rebalancing the food system and transitioning it to a fair, healthy and environmentally friendly system. Preventing food waste simultaneously addresses a number of challenges: creating sustainable food systems for undernourished and overweight people; improving food security; ensuring that every living thing has access to healthy, nutritious and sustainable food; and reducing environmental impact, biodiversity loss and climate change mitigation.

Reducing food loss and waste is a shared responsibility that requires action by stakeholders at all levels, i.e. from government, the private sector, civil society, development agencies, research and academic institutions, and consumers. The study aims to provide information and suggest concrete measures to reduce food losses and waste.