


Precursory Study on Sustained Development in Food and Agriculture Education in the Post-Legislative Era [†]

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Abstract: We analyze the recent media reports related to food and agriculture education (FAE) in Taiwan and present the main aspects of the FAE in different ways such as historical society and ethics, food and agriculture industry and responsibility, food and agriculture culture preservation, and education and health promotion. The reports are classified into seven categories: culture, life, agriculture, campus, society, environment, and industry. The results point out the enhancement of the sustained development of the FAE in the post-legislative era due to the increased consolidated relationships among the sustainable development goals (SDGs) and FAE in the food (production and marketing certification), agriculture (commercializing organic agriculture certification), and travel (friendly conservation tourism). Further research needs to focus on the main evaluated aspects of FAE that appear more frequently in the related research for the promotion of education and health, and historical and ethical justice. FAE seems to be preferred in the metropolitan area while teaching in the cultural field is more important in the non-metropolitan area than in the metropolitan area, which needs further study.

Keywords: food and agriculture education (FAE); developed sustainability; sustainable development goals (SDGs)



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1. Introduction

The global environment has been affected by human and non-human factors such as climate change, the COVID-19 epidemic, and the war between Russia and Ukraine. Thus, issues related to food and agriculture education (FAE) have been important in human life. The public has paid extra attention to the security of food and agriculture, the self-sufficiency rate of food, and agricultural sustainability through social media reports, videos, and articles. People consider food an important source of nutrition and energy and the production, quality, supply, and distribution of food are critical. Countries emphasize FAE to ensure the stability of production and sales of foods and confirm safe food sources and origins such as organic farming, soil optimization, farming method, and others. The ultimate goal of the sustainable development of agriculture cannot be achieved with food safety problems and polluted agricultural production [1].

FAE has dealt with complexities in the economy, society, politics, culture, and communication as food and diet is important for human beings. Food helps humans avoid sickness and weakness and affects human relationships and even the management of political power. Food and diet influence a person's attitude and define human identity, as what people eat has affected cultural development. Food culture has transformed history

and civilization as it is related to botany, physics and chemistry, agriculture, animal science, agronomy, ecology, anthropology, sociology, geopolitics, political economy, trade, technology, cooking, physiology, medicine, and philosophy. Food and diet impact various social, environmental, and economic phenomena as they are combined with culture, tradition, and community sustainability [2].

Therefore, sustainable development goals (SDGs) have been proposed to solve those problems. As a result, FAE-related initiatives have been promoted among governments, industries, academia, and civil societies all over the world. Societal innovation and integration are integrated into the SDGs to propose the “sociSDGs”. The consolidation of the SDGs and FAE covers the issues of a diversified economy, environment, and social dimensions, including hunger, malnutrition, desertification, water resource use, loss of biodiversity, overconsumption, obesity, and public health. A new FAE, then, is proposed to achieve the first, second, third, fourth, fifth, eighth, tenth, eleventh, and twelfth goals of the SDGs [3–9]. To connect SDGs and FAE, the United Nations Committee on World Food Security established the International Agri-Food Network in which FAE is combined with the seventeen goals of the SDGs from multiple perspectives of sustainable development [10–13].

Recently, international communities and Taiwan have set up social enterprises to advocate eco-friendly agriculture and organic farming integrating educational, industrial, and social entities for sustainable development in a new research mainstream. Empirically, each government has an obligated responsibility to establish the comprehensive development of the FAE system by constructing a certification system for food (production and marketing certification), agriculture (commercializing organic agriculture certification), and travel (conservation-friendly tourism) [14–16]. Frequent food safety incidents over the past ten years have allowed widespread attention and support for FAE from the public, especially the melamine-tainted milk powder incident that occurred in September 2008 that affected mainland China and Taiwan and raised awareness of food safety in the entire Taiwanese society. Other infamous food safety-related incidents occurred including the poisoned oil mixed with low-cost sunflower and cottonseed oils in 2011, the copper chlorophyll added coloring in 2013, and waste oil blended into edible oils in 2014.

FAE has been adopted and developed in many countries without educational consideration for many years but food and agriculture environment education (FAEE) is still necessary to create sustainability based on the original FAE that has educational functions and social movements. Innovation is required in “unsustainable solutions” to solve the unsustainability of FAE. The most significant reason is that FAE has been only a duty of the government but in fact, is an obligation of the public. Thus, the Taiwanese Food and Drug Administration (FDA) of the Ministry of Health and Welfare has taken practical action to promote the importance of food hygiene and safety through websites, social media, and exhibitions. At the same time, each educational institution has strengthened activities regarding FAE. In addition, the Taiwanese National Health Administration of the Ministry of Health and Welfare has supervised the catering industry and schools to reduce chronic diseases caused by diet through multiple channels including regulations, rules, and policies.

To effectively allay the deep doubts about food safety, governments have increased their concerns and the supervision of the agriculture and food industries. In Taiwan, the Food Safety Office is in charge of food safety based on the “Eight Food Strengthening Measures” and the “Food Safety Five Rings” legislated in 2014 and 2016. Since food and agricultural issues are related to health and the environment and food safety is related to the welfare of people, the Ministry of Health and Welfare, the Environmental Protection Agency (EPA), the Ministry of the Interior, and the Ministry of Education are involved in the “education” of food and agriculture. Since 2007, the Council of Agriculture, which is closely related to the FAE has been planning and promoting the “do-it-yourself” approach and the “four health” system in the framework of FAE. Therefore, the responsibility of manufacturers and farmers has increased with the increase in people’s awareness of food safety.

Non-governmental organizations (NGOs) pay more attention to FAE issues for eco-friendly agriculture, the fair trade of food and agricultural products, and a low-carbon diet. The “Four Health Association of the Republic of China” has implemented “Food Education in Primary School” through the “Seed Teacher Camp” for mentor training of FAE from 2013 [17–19]. According to the demand for sustainable development, the Ministry of Education has revised the “School Health Law” to add an article of “health-related courses” in Article 16: “The first health-related courses should include healthy eating education to establish correct eating habits to develop respect for life and nature and to enhance awareness of environmental protection, deepen understanding of the source of food materials, and understand the food culture of the country and region. Schools should encourage students to participate in the school meal preparation process” [20]. In 2015, the article was stipulated in the law, providing a legal foundation for schools at all levels to promote FAE [21]. The government, academia, and civil society are trying to execute FAE and conduct all the related legislative processes, as the “Food and Agriculture Education Law” (FAEL) has passed and taken effect as of 2022 under the request of the society. Thus, FAE promotes a complete legislative foundation that gives accountability, rights, and responsibilities to all relevant competent authorities and the implementation procedures. The FAEL combines educational concepts for sustainability.

This research explores the concepts related to FAE in the world and investigates how sustainable development can be developed in the “educational concepts” of the Taiwanese food and agriculture environment and education (TFAEE). TFAEE is defined as a framework to construct food and agriculture education to help sustainable development. Based on the above review, the elements of food (production and marketing certification), agriculture (commercializing organic agriculture certification), and travel (eco-friendly conservation and tourism) are determined to discuss the sustained development in FAE under the research framework shown in Figure 1 [22].

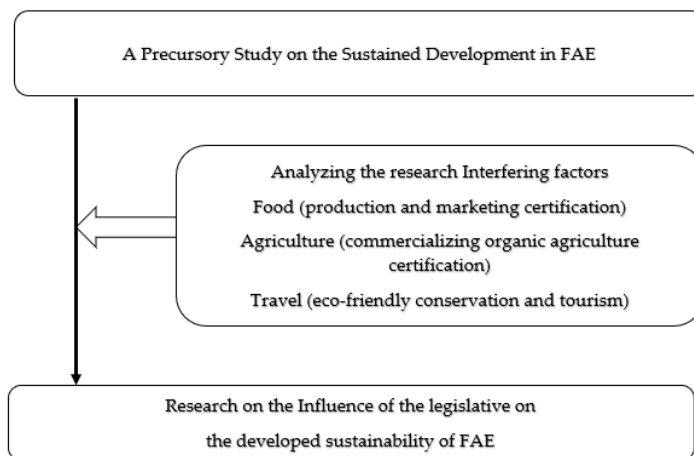


Figure 1. Research framework.

2. Research Concept

The SDGs were set by the United Nations to replace the Millennium Development Goals. SDGs are being implemented from 2016 to 2030 with 17 goals and 169 sub-targets [23,24]. The 17 goals of the SDGs are as follows:

- (1) No poverty: eradicating poverty in all its forms everywhere;
- (2) Zero hunger: ensuring food security, eradicating hunger, and promoting sustainable agriculture;
- (3) Good health and well-being: ensuring and promoting healthy living and well-being at all ages;
- (4) Quality education: ensuring access to education without discrimination, fairness, and high-quality education, and promoting lifelong learning;

- (5) Gender equality: achieving gender equality and empowering women;
- (6) Clean water and sanitation: ensuring access to water, sanitation, and its sustainable management for all;
- (7) Affordable and clean energy: ensuring access to affordable, reliable, sustainable, and modern energy for all;
- (8) Decent work and economic growth: promoting inclusive and sustainable economic growth with good jobs for everyone;
- (9) Industry, innovation, and infrastructure: building resilient infrastructure, promoting inclusive and sustainable industries, and accelerating innovation;
- (10) Reduced inequalities: reducing inequality within and between countries;
- (11) Sustainable cities and communities: building cities and villages that are inclusive, safe, resilient, and sustainable;
- (12) Responsible consumption and production: promoting a green economy and ensuring sustainable consumption and production patterns;
- (13) Climate action: completing mitigation and adaptation actions to address climate change and its impacts;
- (14) Life below water: executing conservation and sustainable use of marine ecosystems to ensure biodiversity and prevent degradation of the marine environment;
- (15) Life on land: implementing conservation and sustainable use of terrestrial ecosystems, ensuring biodiversity, and preventing land degradation;
- (16) Peace, justice, and strong institutions: promoting peaceful and pluralistic societies, ensuring judicial equality, and building credible and inclusive systems;
- (17) Partnerships for the goals: establishing multiple partnerships and working together to promote a sustainable vision.

3. Conclusions and Future Direction

We review the media reports related to the FAE in Taiwan and present the main aspects of FAE in historical and societal ethics, the food and agriculture industry and responsibility, food and agriculture culture preservation, and education and health promotion. Seven categories are defined as culture, life, agriculture, campus, society, environment, and industry. The enhancement of the sustained development in FAE with legislation is found according to the increasingly consolidated relationship between SDGs and FAE. Further research is needed to focus on the issues that appear more frequently in the current food and agriculture education and research. FAE may be preferred in the metropolitan area while teaching cultural subjects is more acceptable in the non-metropolitan area. Therefore, the cross-analysis of teaching and training is also necessary.

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