

Education to create a sustainable global food system

Rosa María Martín

UNESCO Chair on Science and Innovation for Sustainable Development, Global Food Production and Safety
Universidad Nacional de Educación a Distancia, Spain

Ramón Clotet and Yvonne Colomer

UNESCO Chair on Science and Innovation for Sustainable Development, Global Food Production and Safety
Triptolemos Foundation, Spain

This paper argues that education is key to solving the problem of creating a sustainable global food system. The authors advocate for education at all levels on the interlinked concepts of food availability, economics, policy and culture as this increased awareness will help create conditions conducive to resolving this 10,000 year-old problem.

The world is an uncertain, complex and precarious place as we are faced with the fragility of our planet and its ecosystems. While the solution to the problem has yet to be found, it will doubtless be complex and involve many paradigms shifts and technological changes. These new and complex challenges require a change in mentality, awareness-raising and a great deal of training. Common and aligned fronts are required to take action in highly diverse environments, including the intellectual, political, artistic, scientific, business, journalistic and educational spheres. In our efforts to drive change, however, the citizen – who is at once both the subject and the agent of these changes – must not be forgotten. For such shifts and changes to be effective, it is essential that we have consistent and supportive education programmes rooted in all areas of human activity.

Global food systems require urgent restructuring

With the birth of agriculture, the Neolithic Revolution 10,000 years ago marked the beginning of a slow and intricate structuring of society and of its relationship to food. Society has been adapting and evolving towards an ever more complex system. If we consider the four concepts central to the food system – availability, economics, policy and culture – we see that food has a profound influence on each one, and vice versa (Triptolemos Foundation, 2016). Their interaction affects the development of concepts, including the right to food (a consequence of the right to life); wars and food blockades; individual poverty; famines and revolutions; technical innovations; schools of philosophy; religious norms; production; the

relationship between food and health; and gastronomic pleasures. History is full of examples of such interactions and of its attendant mistakes.

The main challenge is finding a harmonious solution to the global food system, which is very much at the root of our planet-wide crisis. Humanity, engaged in all its complex activities, depends on the planet and global sustainability will be achieved only when balance is achieved among humanity's and the earth's respective systems. We need to reimagine critical but forgotten factors to adequately respond to a fundamental, millennia-old challenge that humanity has not yet overcome yet is crucial to successfully dealing with new challenges for the common good. Otherwise, any efforts made will be in vain and their results, rather uncertain.

A human being is a living, heterotrophic biological system. Survival is the primary biological drive of the individual and of the group of which the individual is a part, and securing access to food is the only way to ensure survival. The food environment is as complex as life itself. Its complexity encompasses both biological and psychological structures, and it is for this reason that its proper functioning cannot depend solely on the matter of food availability.

Food systems for sustainability must be taught at all levels of education

The importance of the food system for political stability was already described by a prescient politician of the seventeenth century, Thomas Hobbes, who noted that "the nutrition of a Commonwealth consisteth in the plenty and distribution of materials conducing to life: in concoction or preparation, and, when concocted, in the conveyance of it by convenient conduits to the public use" (Hobbes, 1651). This simple definition illustrates the complicated situation that we have to address. Two factors are central to the equation. On the one hand, since humanity's right to adequate food is a basic right that is not yet universally enjoyed, new technologies and attitudes must serve to ensure universal enjoyment of this right. On the other hand, new challenges cannot be addressed by an at-risk human population with weak global structures.

As an important strategic consideration for the future, it must be borne in mind that the problem of feeding humankind has yet to be resolved. Indeed, this is a problem which has been unresolved for more than 10,000 years. It affects our future and is a fundamental issue as solving this problem means figuring out how to provide the energy necessary to sustain life itself. In the context of the history of humanity, finding this solution would be the single greatest achievement of the twenty-first century.

The influence of the global food system must ultimately consolidate its strategic value in society. We must be aware of this, and the concept must be introduced at all levels of education. We must teach about not only the concept and the associated need, but also its predictive evolution in harmony with the evolution of all the other challenges faced. Humankind's viability on this planet that sustains it does not pose a strictly technical problem, but a global planet/human-development problem in that both entities need to be simultaneously sustainable. Human sustainability, in accordance with UNESCO's objective

for the common good, relies on the proper functioning of the global food system, and this proper functioning requires pertinent education at all levels and in all categories.

Education on global food systems is complex but necessary

Education planning must focus on the evolutive interpretation of history – and not on its repetition – to teach about specific challenges within a global context. These challenges should not be studied in isolation but rather as part of a system. They should be associated with reference points that enable an understanding of the context as a whole. Ultimately, education about the global food system is specific and complex. Unlike other fields (religious, cultural, emotional and so forth), it involves many attitudes which arise spontaneously within the citizen. Many lack a basic scientific knowledge of food, which makes them vulnerable to false, biased or inaccurate information on the topic.

Biased or inaccurate information on food products and diets constitute the most prevalent type of fake news about food. Moreover, these news items are the most widely accepted and they generate a significant amount of business. Any future approach to solving the global food sustainability issue should take into account the need for a well-grounded education on food at all levels of instruction – in higher education to establish solid scientific knowledge; education for middle-management training; and civic education. Trust in unbiased science and education will be key to the scientific-technological future. In all its spheres of activity, education must take into account participation and influence when considering the global system.

The harmonious functioning of the global food system, however, will likely come at the expense of time and resources. Thus, solving the global food system should not be just an isolated goal. Rather, it should be approached in conjunction with other facets of development, establishing the strategic relevance of balancing the sustainability of humanity's dietary fuel and the sustainability of the planet. Education must follow evolutionary progress through the theoretical and practical consolidation of this concept. The implementation of this method if done effectively would provide a golden opportunity to deal with a problem unresolved for millennia and create an essential condition to co-create a stable solution for still-pending issues (i.e. social violence, gender-based violence, public education, war, democracy, uncertainty, etc.) as well as the resolution of new issues (i.e. sustainability/the circular economy, artificial intelligence, automation, big data, education and culture for the new era, etc.).

Education in all areas of knowledge should contemplate the complexity of human nutrition as a system. All educational fields should detail and explore its links to the environment. The approach to this education should be achieved through an exploration of the paths of cooperation. This view was already held by former director-general of UNESCO, Federico Mayor Zaragoza, in the early twenty-first century (2001) when he noted, "In addition to the global view, it is essential that we tackle the vast complexity of surrounding circumstances. Simplifications are not appropriate because they do not adequately reflect the intricate, compact warp and woof of the matter. It is therefore advisable, from the very outset, to provide basic knowledge and to accustom to an interdisciplinary approach, to teamwork. Know in order to foresee, foresee in order to prevent. To my mind, foresight – prevention – is

another of the great responsibilities of the human species. There is no greater victory. We must permanently adopt the sentry's attitude; we must keep watch so that we can sound the alarm on time in order to prevent, to the extent possible, the tragedies, the events which do the greatest harm to human dignity. In my opinion, today, at the dawn of the century and of the millennium, development of this capacity for foresight is one of the major roles which higher-education and scientific-research institutions must fulfil" (F. Mayor, 2001).

Future education should give us a broad understanding of the concept of the global food system and of its interrelationships. It should give rise to common strategies that lead to solutions for future challenges so that humanity can achieve its objectives for well-being in a sustainable setting that is in harmony with the planet.

References

Hobbes, T. 2003. *Leviatán* (1651). Buenos Aires: Editorial Losada.

Mayor, F. 2001. Educación, camino de la paz y del empleo conferencia, Madrid, 24-25 April 2001.

Triptolemos Foundation, 2016. Prólogo Mayor, F. El Sistema alimentario: globalización, sostenibilidad, seguridad y cultura alimentaria. Editorial Thomson Reuters Aranzadi