

Innovation for overcoming the monotony of the global agrifood system

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The economic performance of the Green Revolution's technologies contributed, during the 20th century, to neutralize or, at least, to mitigate the impacts of the critiques directed at it due to its socio-environmental impacts. Nowadays, what was for fifty years a conquest has led to a collapse, whose costs are not revealed in the price system, but are gigantic and surpass the annual revenue of the entire agri-food system. The recognition of this collapse is no longer restricted to social movements and minority sectors of the scientific community but also comes from both the World Economic Forum and the CGIAR.

The documents from the World Economic Forum and CGIAR present two challenges that were not part of the concerns that dominated the critiques directed towards the Green Revolution during the 20th century.

The first refers to a crucial dimension of the Green Revolution technologies which is their expression on the supermarket shelves, with the increasing advance of ultra-processed products and studies on their destructive impacts on human health. The report from the World Economic Forum, launched in december 2023, on ultraprocessed products makes a devastating accusation, showing these products as vectors of the global obesity pandemic which is at the root of the world's most lethal diseases, the non-communicable diseases (heart diseases, type 2 diabetes, various types of cancer). At the same time, it proposes that the food industry undergo transformations that do not seem to be on the corporate horizon, even for those who seek to show commitment to ESG.

CGIAR (through an article published in The Telegraph by Ismahane Elouafi, its current director, and by Shakuntala Thilsted, a member of the EAT Lancet Commission) points the finger at the monotony of the global agri-food system that has 75% of the calories it offers concentrated in just six products. The advance of extreme weather events has been showing the dangers of this concentration.

On what technological basis can this collapse be confronted? A part of contemporary reflection turns to the appreciation of methods that would, virtually, emancipate human nutrition from its current dependence on soils, animals, and photosynthesis. Cellular agriculture and vertical farming are the main expressions of this trend. However, there is in scientific research and the business community an increasingly consistent effort to use science and technology for moderate intensification where biodiversity and the capacity to neutralize greenhouse gas emissions can be included within agriculture and animal husbandry.

As a huge part of the products until now based on Green Revolution's technologies are exported to feed animals in China, the paths of the fighting against the monotony of the global agrifood system are specially importante to the relations Brazil/China.

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