



Climate Change and Food: Challenges for the Future

The Third AP-SAFE Conference on Agricultural and Food Ethics, to be held at National Taiwan University, on May 11-12, 2018, hosted by the Dept. of Bio-Industry Communication and Development, College of BioResources and Agriculture.

Conference statement

Agricultural and food activities today exert a range of wide-spread, multifaceted impacts on the climate and environment. Notably, agricultural and food activities produce an estimated 10% to 12% of human-generated green-house gases, particularly from livestock, rice paddies, overuse of fertilizers, not to mention slash and burn farming. Moreover, when the impact of deforestation and other forms of land clearing for farming is included, agriculture's net contribution to greenhouse gas production rises to 24% globally. Consequently, climate scientists warn that people involved in agriculture and food production, must strive to innovate ways to reduce the adverse impact that these activities exert on the climate and environment.

Immediate steps must be taken to reduce the climate and environmental impact of agriculture and food production-- as well as of other human activities-- lest a series of unprecedented humanitarian disasters unfold. While the global news media and officialdom remain distracted and obsessed with fanciful political tweets and personalities, the greatest humanitarian crisis since 1945 looms in plain sight. At this very moment, over 20 million people face a serious risk of starvation and famine in Yemen, South Sudan, Somalia, and northeast Nigeria. Without coordinated worldwide efforts to provide vast infusions of food and medical assistance, countless people soon will begin to starve to death and more will suffer and die of disease. The root cause of this humanitarian disaster is long-term drought caused by side effects of climate change, and the effects of the long-term drought are magnified by civic unrest and civil war in the course of which besieged leaders deny infusions of aid they deem might energize enemy and potential enemy forces.

The climatic impact of food production goes in hand with far-reaching environmental impacts. In particular, modern agriculture is increasingly invasive. Armed with heavy machinery, it spurs the clearing of bio-diverse tropical forests, the farming of formerly marginal lands, thus destroying niche wildlife habitats; moreover, it intensifies the thrust of industrial farming in sensitive landscapes and watersheds. Today, a vast portion of the Earth's landmass is already under the plow. At the same, every day more precious farmland is being sold off for alternative uses: industrial, residential, recreational. In the United States alone, expanding suburbanization is laying waste to vast tracts of precious farm land, which is sold off at unheard of prices. Some modern urbanites retreat to the countryside to farm or operate a hobby farm, but few are equipped to farm in the full sense of the word and productivity falls off.

The climate and environmental footprint of agriculture and food production on the surface of the Earth is 60 times that of all the world's pavements and buildings. Moreover, through increased irrigation, modern agriculture is depleting the world's rivers and aquifers. For example, excessive irrigation in the US and India is leading to diminished and disappearing river flows and declining water tables. In recent decades, China has been over-damming her rivers as well as fouling her lakes, rivers, and coastlines. Moreover, modern agriculture increasingly contaminates the surrounding river and lake waters with fertilizers, pesticides, and herbicides, causing not just water pollution but "dead zones" at the mouths of many rivers. A staggering 50% of fertilizer runs off into waterways.

At the same time, increased agricultural production is required to feed the world. At present, besides the looming famine in sub-Saharan Africa, a staggering 1 billion people suffer from chronic hunger and malnutrition. Ironically, there is sufficient food under cultivation to feed everyone globally, but the food isn't properly distributed and many people lack the money to purchase it. The markets increasingly follow the consumer dollar and there is reduced distribution according to need. By the year 2050, the world population will have grown by 2 to 3 billion but the land available for cultivation may well drop due to the diversion of farmland to other endeavors. At the same time, demand for food will double in the next thirty years, but demand for biofuels and other non-food products, such as palm oils, will rise and sap food crop production. Hence, even if the food distribution and poverty problems are solved, crop production will still need to be at least doubled to assure adequate food supplies worldwide.

We who work in agriculture and ponder agricultural and food issues increasingly face an existential ethical challenge to ensure that the 7 billion—and rising-- people of planet Earth have access to nourishing food while at the same time reducing agriculture's adverse impact on the climate and the environment. As noted, the multiple challenge is to ensure that food production is doubled and more fairly distributed in the coming decades while at the same time making sure that this food production is done in more sustainable and environmentally friendly ways.

At a certain level, this multiple challenge is a practical problem, and is amendable to technological remedies. Nonetheless, the scientists and technologists need to be rallied to the cause, and the farmers and other food producers need to be persuaded to change their practices, a hard sell if they perceive the changes as infringing on their right of choice and affecting their bottom line. Perspicacious official leadership and wise counsel are needed to lay out the stakes, offer guidance, and bring the stakeholders to the table. This is why and where the social and ethical dimensions of this multiple challenge come to the fore.

Importantly, the practical urgency of this multiple challenge can be viewed as giving new meaning and impetus to every issue and concern of agricultural ethics and food ethics.

In summary, the main issues and concerns of agricultural and food ethics proper include the following, crops production and environmental impact; animal production in climate and ethics; planning and land ethics; consumer and food safety; food supply chain, policy and politics; food sovereignty and justice; gender and food; indigenous people's right in foods; GMO in food production; ethnic groups and food cultures. Many of these ethical issues and concerns stem from the rise of modern agriculture and food production and culture. East Asia and Southeast Asia also feature age old agrarian traditions, knowledge, and practices, which tend to be

sustainable, environmentally friendly, and applicable in certain environmental niches where modern equipment and methods fear to tread. In some locales in Asia and elsewhere, traditional agrarian and food production practices are returning following misguided boom and bust introductions of modern agriculture. All of these ethical issues and concerns promise to offer needed counsel for cleaner and more climate friendly approaches farming and food production.

This will be an interdisciplinary conference and presentations from the humanities and social sciences as well as the natural sciences and agriculture and food science will be welcome. Abstracts will be welcomed that address any aspect, issue, or concern of agricultural and food ethics, including climate and environment, from field to table, from any perspective.