



CODEX *PLANETARIUS*

Maintaining the Environmental Sustainability
of Food Production

ABSTRACT

We need a mandatory international system to monitor the health of our planet's resources to continue production of globally traded food.

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Summary

As proposed, the *Codex Planetarius* is a mandatory system to monitor the health of renewable environmental resources used to produce globally traded food. Focused on a planetary scale, it establishes and requires minimum performance levels for countries to enter global markets. The idea is based on the existing *Codex Alimentarius*, the only internationally recognized set of standards to ensure food is safe and can be traded.

Context

Until the early 1900s there were virtually no rules governing the health and safety of food. Then in 1906, Upton Sinclair wrote his novel *The Jungle*, exposing health violations and unsanitary practices in the American meatpacking industry, alongside the harsh conditions and exploited lives of immigrants and workers. The alarm raised, the slow march of incremental reform to the food system began.

Over many decades, thousands of (at best) confusing health and safety standards designed to protect consumers were created by the private sector, cities, countries, and regions. In response to this legislative babel, and as the amount and types of food traded internationally grew exponentially, in 1963 the *Codex Alimentarius* was established as a set of minimum mandatory health and safety standards for globally traded food. Importantly, however, while the *Codex Alimentarius* aims to protect consumer health and fair practices in the food trade, it does *not* address the production of food or its impact on the health of the planet.

As the population rises and the climate crisis quickly emerges, bringing uncertainty to an already flawed food system, it is time for a second *Codex* focused on the health and safety of the planet—a *Codex Planetarius*. We are living beyond the carrying capacity of the planet, using resources at a level that would require 1.75 planets to replace, and growing. Nowhere is this truer than with the production of food, which already has the biggest impact on the planet of any human activity. And, over the next 40 years, we will need to produce as much food as we have over the last 8,000.

Planetary Management of Planetary Health

People have long taken the health of the planet for granted. But with increased population and per capita income, accompanied by dietary shifts, the planet's ability to regenerate renewable resources will decline unless we find ways to reduce the impacts of all food production. We need to manage the planet holistically, not piecemeal. To do that, we must measure and manage the key impacts of food production, acknowledging that while some resources may be renewable, our planetary boundaries are finite.

For 30 years we have seen the proliferation of voluntary standards toward this aim. Conservation NGOs have developed metrics for food and soft commodities (those that are grown, not mined) that address impacts from primary production and processing. Hundreds of certification and standards programs have been created by NGOs and the private sector that use indicators like 'zero deforestation' and 'high-conservation value' or 'high-carbon stock.' Many efforts use overlapping indicators, and most efforts are voluntary and focused on the practices of individual producers, supply chains, or commodities, and they are based on what better performers are already able to do. In both instances, programs tend to be practice-based:

they tell producers what to do and reward them for doing it.

Governments have also become increasingly aware of the impacts of producing food alongside the need to maintain the resource base for future generations, for both food and national security. They've developed national laws and regulations targeting key impacts of food production, but there is little harmonization, making them near impossible to abide or enforce across global supply chains. The planet can't be managed on a country-by-country or a commodity-by-commodity basis. Nor can we manage it through voluntary certification programs and standards that only reward the better producers who can afford to prioritize and engage in them.

In theory, the best voluntary standards identify a few key impacts of producing a food commodity and then ensure that certified producers achieve measurable performance levels that are agreed to be 'best' in class. The goal of most voluntary certification programs is to reduce the key impacts of production, and they were created to go beyond what is required by law, and to signal as much to the consumer. But the most significant impacts of producing any commodity do not come from the better producers—they come from the worse ones. Data across commodities suggest that the bottom 25% of producers account for about 50% of the impacts associated with producing any commodity globally—but they only produce 10% of the product.

Current efforts directed at agricultural production are separate from the internationally recognized codes that are accepted by governments regarding legality and production like the World Trade Organization (WTO), or that are used to protect human health, such as the *Codex Alimentarius*. Voluntary programs are simply not operating at the scope or scale needed to protect planetary health. This needs to change.

While there are currently few precedents, the WTO allows for differentiation to protect human, animal or plant life or health, to conserve natural resources, and to align with public values as part of the Art XX GATT Exemptions so long as requirements do not discriminate against producers and are even handed between those required for domestic producers and those required for imports.

What is lacking, though, is any global standard that addresses the key impacts of food production. Ideally, this standard would encompass no more than 10 impact areas and would apply to all foods. Consensus would need to be reached about how to measure the impacts, and what levels are acceptable in different geographies and for different foods. Such measures should be developed to link to private voluntary standards and the UN Sustainable Development Goals. Many producers and countries already collect some of this information so not all will impose additional costs.

The Codex Alimentarius and the Codex Planetarius

In 1963, the FAO created the *Codex Alimentarius* to provide governments, food producers, consumers, and other stakeholders with a uniform set of principles and practices to promote food safety globally. It also elevated the issue of food safety, and it continues to provide a platform to improve food quality and fair practices. The FAO stepped into this space after more than 50 years of the proliferation of competing systems and standards.

The *Codex Alimentarius* focuses on metrics that reflect key consumer health and safety issues: pesticide, antibiotic, and other residues; e-coli, salmonella, aflatoxin, bacteria, and other direct health issues; dilution; spoilage; foreign matter; etc. However, it does not address the health of the planet, which has direct linkages with the health of people.

Similarly, the 'One Health' approach has gained prominence and momentum in recent years in recognition of the connections between the health of people, animals, and environment and is operating at local, regional, national and global levels to promote interventions focused on protecting public health, including from the rise of zoonotic diseases.

Multitudes of environmental certification programs and standards exist that provide principles, criteria, practices, and, in a few cases, actual metrics necessary to reduce production impacts for individual commodities. But there is no platform on which to ground the global food production system; no critical set of key environmental indicators to guide its increasingly fraught future.

Which is why the *Codex Planetarius* is so necessary. It would provide governments, businesses, trade authorities, multilateral organizations, NGOs, civil society, and other key institutions a baseline for environmental protection in the global production of food and soft commodities. The *Codex Planetarius* will harmonize and prioritize the diverse efforts of commodity-specific standards to form a cohesive, mandatory mechanism—an “umbrella” standard—to monitor how well the planet's renewable natural resources are being managed for future generations.

It is important to note that the *Codex Planetarius* will not replace what governments are already doing. Rather, it will help build consensus about, and then codify, the most important issues for governments to address. This will be both more efficient, enforceable, and cost-effective in the long run.

But there are key differences between what is being proposed and what already exists. *Codex Alimentarius* has been more acceptable because governments have seen the importance of safe food and healthy diets for their citizens. While there is also concern for the planet, the connection between human health and environmental health, not just for this generation but for future ones as well, has not yet been made with sufficient force to overcome the concerns about what it might mean for current generations—especially the implications for current producers and the cost of food for consumers.

As was true for the *Codex Alimentarius*, the *Codex Planetarius* as first developed, will not be perfect. Continuous improvement and adaptation will be key. As population and consumption increase, and as diets shift, the metrics and management issues must be adaptable to reflect those new realities as well.

Global Systems to Manage Global Problems

There are currently no systems in place to manage the planet's renewable resources for food production. What is in place are agreements that have effectively managed single global issues, like the Montreal Protocol for addressing the ozone issue; or the Stockholm Convention to address persistent organic pollutants; the Convention on International Trade in Endangered Species, a multilateral treaty to protect endangered plants and animals; or even the Paris Agreement on mitigating climate change.

For the most part, however, environmental issues are addressed by governments with systems that are quite variable in focus, quality, and enforcement. There are some in the private sector that have also attempted to lend their weight to specific issues (e.g., deforestation with the Consumer Goods Forum and the Banking Environment Initiative), but the sustainable use of renewable resources needs more holistic or systems-level approaches. It is not possible to manage a planet one country, or one issue, at a time.

Within the global context, the *Codex Alimentarius* is the most relevant system for comparison to the proposed *Codex Planetarius*. *Codex Alimentarius* has been implemented and adapted, for 55 years and counting. Its success can be attributed to the desire of countries to protect their citizens from harm, and the willingness to implement minimal standards on which more rigorous voluntary standards could then be based.

The system also makes public data about the products that do not meet minimal standards, so that they cannot simply be shipped to another destination. The system has been created to continuously improve through external review and oversight, and as science and technology advance.

Development of the *Codex Planetarius* will build on lessons learned from the development and implementation of the *Codex Alimentarius*, including: how it was created and by whom; where and how it's housed and funded; what the major implementation challenges have been; how data are collected, housed, analyzed and reported; and how it's functioned within the WTO.

The Complex World of Food Commodity Production

The same commodities can be produced with more or fewer resources and impacts, depending on when and where production takes place. As we are already seeing, climate change will result in significant shifts globally in where food and commodities can be produced, as well as what the impacts are. It is also true that some commodities have greater environmental impacts than others. However, the issue is understanding tradeoffs and optimizing amongst several key impacts rather than just maximizing for one, e.g. deforestation.

Under a 'business as usual' scenario, the costs of environmental externalities are not included in food or commodity prices. One way to begin including environmental externalities in pricing is to insist on minimal environmental impact performance for globally traded food commodities. The cost of goods sold would then reflect the costs of production incorporated in compliance with *Codex Planetarius* standards.

With private-sector support, voluntary certification and standards programs have made strides in building global awareness about the key impacts of producing food and, to a lesser extent, what can be done to reduce them. As mentioned, the impacts of producing individual commodities can vary considerably, even within a very small area, and ways to reduce impacts will most likely vary a great deal by producer, region, and country. But without consistent metrics it will be impossible to show continuous improvement.

In other global trade systems, there has either been forgiveness for certain countries regarding compliance, or more flexible timeframes for compliance. For example, except for health and safety requirements that protect consumers, the least-developed countries are often exempt from complying with trade regulations that more developed countries must meet.

But in the end, it will take government to move the bottom, where the biggest impacts occur. Such actions protect renewable resources for future generations and ensure that the cost of sustainability is passed on to the consumer. If government does not take action to protect renewable resources today, it will have to address the impacts at a later date when they will be much more expensive to repair, and the cost will be borne by society as a whole.

What is needed to develop a *Codex Planetarius*?

To be effective, the *Codex Planetarius* will require the collection of consistent data from around the world. To reduce the cost and make the system manageable, we could support the collection of data within bilateral trade agreements.

It is also possible that existing data can be repurposed for *Codex Planetarius*. The questions to be answered are: what are the most important impacts that need to be monitored to ensure more sustainable food production; what minimal metrics should be required to ensure more sustainable production and long-term producer viability; what data already exists; how much does it vary by region and how should that be reflected in national metrics; who has it; who owns it; how can it be made more complete in a cost-effective way; and how often does it need to be collected?

From work on voluntary standards, there is some consensus on a relatively short list of key impacts for assessing the global impact of food production.

- Biodiversity loss
- Habitat conversion/loss
- Soil health
- Water take quantity
- Water effluent quality
- GHG emissions
- Agrochemical toxicity

The goal against each impact would be to demonstrate continuous improvement against an established baseline—but minimal performance levels of acceptability at the level of the global commons would likely also need to be set. We would then need to explore if/how this system could be codified within the system of global trade.

It is likely that any attempt to maximize positive performance against one or two impacts will tend to have negative impacts on others. The key for *Codex Planetarius* will be how we think about optimizing performance across several key variables at a planetary level. It could eventually take the form of an index.

At a planetary level, it will be essential to monitor cumulative impacts to understand overall carrying capacity and planetary boundaries. However, to motivate change on the ground, it will be important to understand the productivity implications of key environmental impacts on the financial viability of individual producers.

The assumption is that *Codex Planetarius* will help integrate environmental externalities into pricing. But how this will happen, or which externalities will be captured best by the system, is not yet clear. Another question is how to integrate new metrics into well-established global

markets and trading systems without losing current efficiency for food and commodities that already have clear definitions of product attributes.

While there are currently few precedents, the WTO allows for differentiation to protect human, animal or plant life or health, to conserve natural resources, and to align with public values as part of the Art XX GATT Exemptions so long as requirements do not discriminate against producers and are even handed between those required for domestic producers and those required for imports.

Minimum requirements for food safety already exist to protect the health of consumers. It is possible that similar thinking might be acceptable for protecting the health and safety of the planet for future generations of consumers—who will depend on the planet's renewable resources for food.

Developing the Codex Planetarius

With the right institutions, partners, and international collaborative framework in place, we estimate an effort of this magnitude could be rolled out in approximately ten years or less. There is no time to lose.

Phase 1:

- Create awareness about the need and the opportunity.
- Identify and recruit key individuals and institutions who are supportive and knowledgeable about food systems and the politics required to lay the groundwork for such an effort.

Phase 2

- Identify and recruit *Codex Planetarius* champions, influential global spokespeople who are committed to take up leading roles to turn this vision into a reality. This will include key politicians as well as those in high-level UN positions, and multi-lateral organizations

Phase 3

- Recruit scientists to determine impacts and indicators to be addressed and begin a credible process to socialize the thinking globally. These indicators and metrics will then be vetted through a global process and period of public comment. Every effort will be made to utilize data that is already available and being collected to reduce the cost of these efforts.

Phase 4

- Test the indicators and metrics in the field and finalize them. Assess the state of data collection in different countries against the indicators and metrics as well as the cost of rolling out systems to collect additional data.
- At this point, it will be clearer how much the system will cost, how the work going forward should be prioritized and budgeted.