Chapter 4: Values in the Food System


“Too many people today know the price of everything and the value of nothing.”
- Ann Landers

Food systems are driven by the decisions people make, and those decisions are affected by values. People’s values shape their perception of something’s importance or worth, whether a tangible item that can be bought and sold, or an aspect of quality of life that can only be experienced. How much is a bushel of corn or an acre of land worth? You can check out recent sales data to get an answer. How important is clean water, or vibrant rural communities? Things like these are valuable but not easy to put a price on.

Economic, environmental, and social values all play key roles in the food system. They are interwoven, sometimes reinforcing and sometimes conflicting. Markets are driven by monetary worth. Even though people may value a clean environment and social well-being, these are usually under-valued in the marketplace because we lack widely accepted, systematic approaches for recognizing their worth. The positive and negative impacts that are not captured by the market are known as externalities.¹

People seek out low prices for items like cars, clothing, computers, and food. They are not willing to pay more than ‘necessary’ for such items, yet they also value environmental quality and probably don’t want products they buy to contribute to water pollution or soil erosion. They probably also value fairness and don’t want people to suffer unhealthy or exploitative working conditions when they make the products.
Lacking information about anything else, market price becomes the primary influence on consumer behavior. The same can be said of commercial or enterprises. A restaurant chain that sells chicken sandwiches probably spends a lot more time seeking out the lowest cost chicken than it does determining how poultry farm waste is managed or how poultry processing plant workers are treated.

In the food industry, economies of scale, yield maximization, and short-term profitability drive most of the thinking and practice. At the same time alternative, locally oriented food systems are emerging that give more recognition and support to environmental and social values. Deeper consideration of non-market values in the food system is just beginning to gain credibility among policy makers, financiers, and scientists who are intellectually invested in mainstream financial models and technologies. To change their views and decisions, as well as those of food producers and consumers, will require a robust analytical framework that allows environmental and social values to be part of the calculation.

“Everyone wants to earn more, to buy more, to have more. They discount the influence of other values—community, loyalty, love of the land, and continuity, for example. But these values are real, and they are economic values because they influence economic behavior.”


Food System Consolidation and the Narrowing of Values

A small number of economic entities wield tremendous power at every level of the modern food system, from the inputs farmers use such as seeds and fertilizers, to the distribution of raw commodities such as grains and meats, to the processing of those commodities into branded products, to the retailing of those products by supermarkets and fast food chains. In each food system sector the market is dominated by an oligopoly, or a cartel, where a small number of
corporations have disproportionate influence, not only on prices but on the type of products available. If a new company comes along with a successful product or process, they are likely to be out-competed or purchased by one of the larger entities. As the few corporations with marketplace dominance grow in size and scope of offerings, they gain additional market control, and political influence. The result is entrenched consolidation of the food system, driven by short-term profits. In other words, food system decisions are aimed at achieving profits and continuous growth without substantive consideration of other values that are tied to well-being. Non-market values are dwarfed by the prime objective: to make money, and lots of it. Making money is arguably a good thing, but many problems in the food system arise because that objective is out of balance with values that are harder to put a price on.

Within a food system sector, the names of the largest businesses and the proportion of total sales they represent varies from year to year, but marketplace domination by a relatively few companies is now the norm. For example, the global commercial seed market is worth about $35 billion annually; the top 3 companies account for over half of all sales and the top 10 companies control 75% of that market. Ten companies control almost 95% of the $44 billion global market for pesticides; six of these are also among the largest seed companies. Seven firms, all subsidiaries of multinational drug companies, control 72% of animal drug sales. Four firms account for 97% of poultry genetics. Similarly, four companies control the majority of beef packing in the U.S. and the same is true for pork and poultry processing. Just three companies dominate flour milling and soybean crushing.

Figure 4.1. Consolidation of the seed industry. The seed industry is one example of consolidation in the food system. Many small, regional seed companies have been purchased by larger, global companies in recent years.
Oligopoly is the norm not just for food production and processing but for food retailing as well. The 10 largest U.S. food retailers account for about two-thirds of all grocery store sales.\textsuperscript{5} In the largest 100 metropolitan areas, four retailers control nearly three-quarters of grocery sales.\textsuperscript{6} The 10 largest fast food chains generate more than $95 billion in annual sales,\textsuperscript{7} which is over 20\% of the $469 billion that Americans spend at eating and drinking places.\textsuperscript{8} The ten largest food and beverage processing companies in the U.S. have annual sales of about $200 billion,\textsuperscript{9} which is about one-third of the market for all manufactured food sales.

Figure 4.2. Supermarket share of grocery sales. Ten supermarket chains account for 68\% of all grocery sales in the U.S.
By some accounts, our food system is working well regardless of consolidation. After all, food is relatively inexpensive in historic terms, when measured as the proportion of household income spent on it. But this analysis ignores the true costs of food. It doesn’t account for what is paid through taxes to fund farm price supports, crop disaster payments, highways to transport food, and water systems to irrigate arid regions to grow crops. Simple analyses also fail to capture the environmental and social costs associated with industrial farming and food processing, such as those that result from water pollution, soil erosion, greenhouse gas emissions, diabetes, food insecurity and low wages paid to farm workers. These negative externalities add up to a large expense for society.

Improvements in the food system can be achieved through a variety of methods that address both market and non-market values. Regulations can rein in practices that are detrimental to people or natural resources. Research and education can identify and disseminate approaches to improving human health, and market forces can provide powerful incentives for a variety of practices that benefit people and the planet. However, if market forces are to help improve the food system, consumers need to know what’s really going on. And therein lays the rub: much of the food system lacks transparency. As a result, consumers often invest their food dollars in practices that don’t match their values. A lot of the people who want an inexpensive hamburger
would be willing to pay a few dimes or even dollars more for that burger if it meant cleaner water and healthier cows and pastures. Many people who want low-cost milk would pay a bit more to help keep family dairy farms in business, or to support the vitality of rural agricultural communities they visit as tourists. But absent information on the indirect effects of their food choices, people make their purchasing decisions based on attributes they can directly assess, like product appearance, flavor, and price.

**Valuing More Than Money**

Values shape every step of the food system, from practices on the farm, to marketing messages, to consumption patterns and food waste management. Further, values shape the policies and perspectives that affect economic decisions, environmental stewardship, the pursuit of ‘efficiency,’ and the ability to achieve fairness and justice in the food system. Values are the basis for a framework of behavioral norms and governmental regulations that set limits on the exploitation of natural and human capital. Over the years, a wide variety of people have articulated the importance of valuing not just the economic but the environmental and social well-being of agriculture and the larger food system. This view is not an aberration; it has been a consistent theme of thoughtful people throughout history, although it is often pushed aside in the pursuit of profits. The following is a sampling of people whose ideas have challenged us to change the food system for the better.

Henry Wallace was Secretary of Agriculture under President Franklin D. Roosevelt. A visionary public servant, Wallace promoted increased agricultural output but also the conservation of natural resources and the well-being of rural communities. Under his leadership the Department of Agriculture established the food stamp and school lunch programs that greatly aided low-income Americans during a time of economic and social stress.
Aldo Leopold, in his 1947 book, *A Sand County Almanac*, described a land ethic in which people have a duty to protect the natural world, even as we manipulate it. He wrote: “We abuse land because we see it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect.”

In her 1962 book *Silent Spring*, Rachel Carson articulated that we have an ethical responsibility to produce food without poisoning the environment. She helped change public policy and corporate behavior by exposing the damage caused by using toxic approaches to pest control. Once people understood what was at risk, many were motivated to shift away from over-use of pesticides because they valued a clean environment.

César Chávez led a social movement and started a farm workers’ union in the 1960’s aimed at stopping worker exploitation. His movement strived to obtain fair wages, decent working conditions and protection of field workers from pesticide exposure. He was responsible for bringing public attention to the fact that the farm workers who were essential to cultivating and harvesting much of our food often had little money or food for themselves.

In 1971, Francis Moore Lappé popularized the notion that an individual’s diet could influence the larger food system as well as their own health. In *Diet for a Small Planet*, she argued that the U.S. food system used too much grain for feeding meat animals given that so many hungry people in the world could eat that grain. She advocated for a vegetarian diet as a way to directly address personal health as well as problems with an industrial agriculture oriented to livestock production.

In 1990 Wendell Berry wrote that “eating is an agricultural and ethical act.” Berry has articulated the importance of community as a cradle of social and environmental values that are
the basis for how people think about the role of government, industry, and science. He argued that these values express themselves in the types of agriculture and food systems we develop.

Fred Magdoff, soil scientist at the University of Vermont, wrote about the connection between ecological production practices and social and economic justice. He described how agribusiness in collaboration with agricultural science have contributed to a production and marketing system that leads to many negative environmental and social effects. This is the result of reductionism that addresses individual problems in isolation from all others. The outcome, he contended, is that “large-scale, highly mechanized agriculture is probably the greatest threat to the existence of billions of people.”

Michael Pollan in *The Omnivore’s Dilemma* argued that the industrial food system obscures relationships and the connection between how food is produced and its environmental and social impacts. He wrote that, “The more knowledge people have about the way their food is produced, the more likely it is that their values—and not just "value"—will inform their purchasing decisions.”

Paul Thompson, philosopher at Michigan State University, described the industrial ethic and the agrarian ethic which are at the core of two competing sets of values that shape how people view agriculture and the larger food system. The industrial ethic views agriculture as just another part of industrial society where commodities are produced at the lowest cost possible. The trend to consolidation in farms and food firms is just economies of scale at work. This system must be applied globally to ensure sustainable food production for the world. Landscapes are viewed in terms of the commodities they can produce, and while there are some concerns over the well-being of communities, environment, labor, and livestock, any negative impacts can be addressed without a severe departure from the industrial model. From this viewpoint,
sustainability is about producing more, with fewer inputs. In contrast, the agrarian ethic values the multi-functionality of agriculture and views it as having important environmental and social functions beyond efficient production of commodities. These functions include providing positive ecosystem services (benefits that people get from a healthy environment) and enhancing the quality of life for people and local communities involved with agriculture. This view argues for fair trade, fair labor, animal welfare, and a major departure from the conventional agriculture model because that model is extractive and not sustainable.

The agrarian ethic aligns with the modern-day ‘alternative agrifood movement’ which is a synthesis of many ideologies and their values. These include: traditional agrarian values of independence, hard work, and family-based farming; community food security values of self-reliance and self-sufficiency; the agro-ecological value of using nature as a model for farming system design and management; and the social justice values of inclusion, equal participation and shared power—not just for farmers and consumers, but for farm workers, food processors, and people of all economic classes, races, and genders.

Networks and Value Chains

A lot of food in our food system is ‘anonymous’ to consumers. That is, it comes without information about its origin and impact. Such anonymity can decouple food buying decisions from the wide range of values that people hold. Low prices trump clean water, healthy soil, fairly paid farm workers, and stable rural communities if all we know about a product is what we can personally observe along with marketing information that may or may not be accurate and complete. Thus, anonymity in the marketplace leads to uninformed purchasing decisions by consumers who unwittingly support food system characteristics that are in conflict with their values. Within the mass food market, anonymity is fostered by geographic distance and long,
opaque chains of custody between producers and consumers. Minimal labeling requirements, co-
m mingling of ingredients from many sources, and products christened with imaginary farm names
further hide the provenance of food. In other words, the food system ‘distances’ consumers from
their food not just by physical distance from source, but also through processing and
packaging.¹⁶

Anonymity and distancing are powerful symptoms of what’s fundamentally wrong with
the food system. At the core of many problems is the way relationships among people are
structured. To transform our food system so it is significantly healthier will require changing the
structure of relationships so they are built around more than prices and profits. They must be
shaped by shared values that support a ‘triple bottom line’ for individuals and society: economic,
environmental, and social benefits. One way to restructure relationships in the food system is to
promote horizontal rather than vertical networks of people.

Vertical networks are largely impersonal and opaque. They focus on the exchange of
goods and services for money. They are hierarchical, with most of the authority held by decision-
makers at the top; their decisions flow through distributors, wholesalers, advertisers and retailers
to a base of consumers at the bottom. In contrast, horizontal networks are people-oriented and
transparent, they are established to provide mutual benefits and shared prosperity; they lack a
powerful central authority and instead use shared governance approaches.

Horizontal networks are not exclusively local, although proximity can create a common
context that facilitates their development. Horizontal networks, like local food systems, are not
inherently good. The outcomes they produce depend on the people involved and the agendas that
are empowered. Horizontal networks, and local food systems, do not exist in isolation; they have
links and interdependencies with both vertical and more distant networks\textsuperscript{17} often leading to a mixture of relationships, which makes sense given the complexity of our food system.

Figure 4.3. Vertical and horizontal networks in the food system. The dots represent people in the two types of networks. In the vertical network, power is held by a few at the top who have little direct connection to the people below that distribute, market and consume products. In the horizontal network, power is shared among participants and activity is aimed at achieving both economic and non-economic benefits.

Although our food system would benefit from more horizontal networks, it will continue to involve, and perhaps require, a blend of vertical and horizontal networks. Take tractor production for example. Unless and until small scale manufacturers figure out how to build these complex machines, rural agricultural communities across the country and the world need a relatively vertical network of factories and their distribution chains so that farm work can be appropriately mechanized. Creating more horizontal networks associated with tractor production may not be a top priority right now. But in some other areas there appears to be stronger motivation to shift to more horizontal approaches. Take seed production, for example. While a few multinational companies dominate this activity there has recently been a resurgence of much smaller companies with strong connections to local and regional farmers and their specific needs. Such companies are often characterized by alternative corporate governance such as employee
ownership, cooperatives, and nonprofits. Johnny’s Selected Seeds, Fedco Seeds, and High Mowing Seeds in New England are examples of this, along with the Family Farmer Seed Cooperative in the Northwest and Native Seeds/SEARCH in the Southwest.

Horizontal approaches within a business sector that has become increasingly vertical are possible. In fact, domination by just a few companies may increase consumer and producer interest in alternative products and business approaches. Take beer for example. Although just a handful of companies dominate the U.S. beer market, the number of craft breweries has increased to well over two thousand in a short amount of time and that number continues to grow.¹⁸ The same holds true for food (some people consider beer to be a food) as many people seek out small scale food alternatives, such as farmers’ markets and community supported agriculture arrangements (CSAs) to experience some balance to the vertical, corporate world of supermarket chains. For most shoppers, the two are not mutually exclusive.

While local food systems generally rely on horizontal networks that support both market and non-market values, local food has its limits as a focus for improving the food system. The problem is that it’s only viable, and beneficial, under certain conditions. These typically include a geographic cluster of diverse farms and processors of a scale that allows them to market to a nearby population of sufficient size and wealth to buy their products. It can be more challenging if you live in the middle of the Wheat Belt, next to an industrial-scale meat processing plant, in an urban food desert, or in a climate that is hostile for growing food. Then, local food may not be feasible for consumers and producers.

For many ‘ag in the middle’ farms, a focus on local food may not be helpful. These farms are described as small and mid-size operations grossing under half a million dollars annually, with farming as their primary occupation. They are often unable to sell their food directly to
local end-users because they produce too much, don’t raise the right products, or are located too far from the markets. At the same time, these farms are typically too small to compete individually in wholesale or commodity markets, where much larger farms dominate. The result is these ‘farms of the middle’ have been disappearing for decades.19 An alternative to selling locally for these farms is to tap into values-based supply chains that promote horizontal networks scaled to accommodate the volume of their supply and the demand from comparably-sized markets.

Values-based supply chains, such as Shepherd’s Grains (below), can create new markets for farms of the middle by connecting the producers, processors, and buyers around high-quality, differentiated products with an unmet market demand. These markets are typically regional, though they may be of any geographic scope. Partners all along the supply chain work in cooperative (horizontal) rather than hierarchical (vertical) networks where the performance and well-being of all partners is equally important. Through fair distribution of profits and shared decision making, this business model codifies the social value of making commitments to the welfare of all strategic partners in the chain, including the farmers, rather than treating them as interchangeable with other potential suppliers.

Box 4.1. General characteristics of values-based supply chains.

- Capacity to combine scale with product differentiation, and cooperation with competition, to achieve collaborative advantages in the marketplace.
- Emphasis on high levels of performance and inter-organizational trust.
- Shared values and vision, shared information (transparency) and shared decision-making.
- Commitments to the welfare of all strategic partners in the chain, including appropriate profit margins, fair wages and long-term business agreements.
Shepherd’s Grains: Building a Regional Value Supply Chain around Sustainability

While policymakers and scientists are working on developing indictors of progress, entrepreneurial farmers are taking matters into their own hands by implementing production and marketing practices that reflect their values and work towards self-defined goals of sustainability. Shepherd’s Grains in Washington is a leader in this movement.

One of the founders of Shepherd’s Grains, Karl Kupers, grew up on a wheat farm in Washington, the son of a sharecropper. Fifty years later he is still growing wheat on that same land – but in a very different way. “In 1982, over half my income as a wheat grower came from subsidies. Trying to make a living at the mercy of volatile commodity prices, I was on a roller coaster that wasn’t good for the farm, the consumer, or the environment. In 1985 I decided to create a farm that didn’t need subsidies. For wheat production that meant diversifying and caring for the long-term health of the soil using no-till and crop rotation. I was heading towards environmental sustainability, but I needed a marketplace for my crops outside of the commodity markets. So I created Shepherd’s Grain with my partner, Fred Fleming. Our goal was to reconnect the farmer to the consumer through relationships with a focus on all three parts of sustainability.”

“Sustainability is never an end, it’s a goal and you’re constantly seeking new ways to achieve it in all three areas. Focusing on sustainability was a radical shift when we first proposed it. As businessmen, Fred and I knew we needed to think about the economics of selling wheat. When it came time to figuring out the pricing, we got some bakers in the room to find out what would work for them. It turned out the volatility in wheat prices from commodity markets was just as difficult for them to deal with as it was for us, and they would welcome stable prices. The commodity market wasn’t based on real business numbers. We went back to the basic business
premise of covering our costs plus a reasonable profit. The wheat buying community understood that and was very accepting of the change. But some farmers who were used to taking prices from the commodity markets thought we couldn’t set the price; we had to take what the market would give us. But they were wrong.”

“Being transparent about our costs and making sure we cover them has been an amazing part of the success of Shepherd’s Grains. We developed two important policies for Shepherd’s Grains: First, set the price depending on what would cover costs; de-commodify what had become a commodity. Second, reconnect the farmer to the consumer. To do that, we focused on identity preservation through the chain of custody so that our grain can be traced back from a bag of flour to the farm itself. Every year it’s become more important to have that traceability. Our customers know and trust their farmers through the relationships we’ve developed.”

“When I look back at my values over time, I realize that they have not changed but rather have been validated. I always knew something was wrong with relying on subsidies and not managing the land for environmental health over the long term. But I didn’t have a chance to act on those values. Now I have the opportunity to be self-motivated by values and more importantly to share them and to see how they can have a positive impact on society. It’s not my values exactly that I’m sharing; it’s the value of doing the right thing for the land and the people.

“The model we’ve used for developing Shepherd’s Grain is transferable to other products. I’d love to see all agricultural producers receive the cost of production plus a reasonable rate of return. If producers are transparent, then buyers can make informed decisions. Buyers feel good about the fact that the farmer is receiving a fair and equitable price and they are willing to pay more to support transparent profits.”
“How does the price of Shepherd’s Grains wheat compare with commodity prices? Sometime our wheat is a little more expensive and sometimes it is less expensive. Our buyers appreciate the stability we’re providing with our pricing structure. There are tremendous costs for both the bakers and the growers who have to deal with the volatility of commodity markets.”

“This isn’t rocket science. We were just a couple of farm boys trying to do something different to address a problem in the best way we knew how. It’s simple but it requires following your dreams and passions and having commitment to stick to a set of values.”

Figure 4.4. Shepherd’s Grain logo. Karl Kupers and Fred Fleming founded Shepherd’s Grain in Washington based on goals of sustainability for environmental health, social justice and economic profitability.

Box 4.2. Shepherd's Grain sustainability goals

1. Environmental Health: Taking care of the land, soil and animal life that exists on the land.
2. Social Justice: Developing relationships to inform and educate customers.
3. Economic Profitability: Maintaining a pricing structure derived from the producer's cost of producing crops.

The need for more values-based food supply chains extends to global commerce. If you like to drink coffee or eat chocolate, as many of us do, our food choices have a long reach. Those
of us in northern climates who consume tropical and sub-tropical products have an obligation to communities far away that also desire and deserve well-being. We need to think beyond local and regional food systems to build horizontal relationships across cultural barriers and geographic distances. Fortunately, this can be done without much difficulty in the age of information. Many of us already support coffee farmers or cocoa producers and their villages or cooperatives, thanks to the work of values-driven marketing entities and ‘fair trade’ oriented companies. But a lot of work is still needed to build horizontal networks for many more crops, food products and agricultural communities around the globe.

Sustainable Harvest Coffee: an International Value Supply Chain

For roasters and cafes wanting to feel good about the cup of Joe they offer to customers, companies like Sustainable Harvest provide an answer. Sustainable Harvest imports specialty-grade coffee from nearly 100 producer organizations in 17 countries in Latin America, East Africa, and Asia. The company acts as a link between roasters and growers while importing beans.

Founded in 1997, the company has 30 staff members working from offices in Colombia, Mexico, Peru, Rwanda, and Tanzania, along with a headquarters in Portland, Oregon, that provides importing, shipping, and warehousing logistics to ensure timely delivery of specialty coffee to roasting companies. Members of the company’s ‘story team’ provide details about specific farmers to roasters and retailers to strengthen the value chain, which the company calls Relationship Coffee.

Sustainable Harvest secures contracts for coffees and oversees delivery and tracking for the roasters. The company introduces growers to loan institutions catering to mid-sized farmer enterprises that then use Sustainable Harvest’s contracts with roasters as collateral against the
loan. This step enables coffee co-ops to pay farmers during harvest, making the supply chain less vulnerable to one-time coffee buyers toting cash, as well as other socioeconomic and environmental forces that compromise stability in an industry with tight margins.

Sustainable Harvest invests two-thirds of its operating expenses in farmer training and development activities. These programs train farmers to increase crop yields and manage risks such as coffee plant diseases. They also help growers diversify crops, including household vegetable production, beekeeping programs and mushrooms (cultivated from the pulp discarded from coffee processing) to provide greater food security. In addition, Sustainable Harvest shows growers how to evaluate their coffee for the qualities that coffee buyers want. A ‘train the trainer’ approach is used to build community capacity rather than reliance on outside expertise.

Sustainable Harvest hosts an annual private gathering that brings together members of the entire supply chain to develop and deepen direct personal relationships and conduct business in an inclusive business environment. The event, called Let's Talk Coffee, is held in a different coffee-producing country each year. The most recent gathering in El Salvador attracted coffee growers and roasters from 22 countries who came together to receive training, share information and trade 11 million pounds of organic, fair-trade coffee over three days.

Sustainable Harvest focuses on connecting all the stakeholders involved in producing high-quality organic and fair-trade coffee to create a sustainable and resilient supply chain. By building direct relationships and investing a significant amount of money into farmer communities, Sustainable Harvest is conducting business in a way that benefits the people who grow the coffee and the environment in which it is grown. This business model brings tools, financing and professional training to the farmer co-operatives so they can better serve their members. By bridging the gap between growers and roasters and facilitating direct
communication and better business practices at both ends of the supply chain, the business becomes more efficient and viable for all involved while also ensuring a reliable source of coffee.

Figure 4.5. A coffee value-chain. In this scenario, a pound of coffee sells for $12.06. This retail price comprises all the monetary value in the supply chain, from the producer to the consumer. The coffee retailer receives $3.75; the coffee roasting company receives $4.65; $0.56 in value is lost (in the weight of water) when the coffee is roasted; $0.18 is paid for shipping, interest on loans and fees; and the coffee grower receives $2.75. This is based on the commodity market price of $2.25, plus the $0.30 premium for organic and the fair trade premium of $0.20 cents. Sustainable Harvest as a specialty coffee importer receives $0.17 that pays for quality control, sourcing and importing the coffee, financing the coffee from port until paid by the roaster, managing the relationship between buyers and growers, farmer trainings, sales and marketing, fulfilling orders, import services, and conducting programs that benefit coffee-growing communities.
As people work to build more horizontal networks, we should be clear about what constitutes long-term success. It isn’t unfettered growth, which simply cannot be sustained. What we need instead are measures of progress.

**Values-Related Measures of Progress**

There’s a time for sheer growth, and there’s a time for different types of development. This is probably true for any living thing, from an organism to a society. Here’s a simple example. For the first sixteen or seventeen years of life, when children go to the doctor for an annual check-up, increases in height and weight are marked on charts that show lines representing the median and the ‘normal’ range for their age. As children grow, they are expected to get bigger by a certain percentage every year. But once adulthood looms, a steady increase in growth is no longer desirable. Instead, the focus shifts to measures of how well health is maintained. For example: blood pressure, cholesterol level, and a stable weight. Parents may also try to assess harder-to-measure attributes of adult well-being like responsibility, tolerance, creativity, and happiness.

The food system needs to take an analogous approach. Once a desirable level of capacity is achieved, how well are food production, distribution and human nutrition sustained rather than increased? What quantity of energy, soil and water are used per unit of production? What is the extent of waste product utilization? How stable is the supply of labor, land and capital? What is the level of job satisfaction among food producers? How equitable is the distribution of wealth that’s generated along the value chain? All these questions make more sense as measures of a mature food system than those that simply track gross production and revenues.

Tools are needed that allow people to plan, track and account for the attributes that define strong communities, sustainable food systems, and healthy populations. Many of these attributes
will be hard to measure, but not measuring them ignores or underestimates their value in the
formulaic world of business and policymaking. This concept of a broad, holistic set of measures
to guide decision-making is not new. The Genuine Progress Indicator (GPI) has been developed
in recent decades as an alternative to the Gross Domestic Product (GDP), which only accounts
for the monetary value of goods and services.

The GPI uses quantitative tools to recognize the interdependence of economic well-being
and the quality of the natural environment and social relationships. One challenge is to identify
key attributes for which data can be readily and consistently collected and analyzed so as to
inform ongoing decisions. There is no perfect way to do this, and there will be different
approaches taken before commonly accepted practices are established. This is evidenced by the
variation in GPI approaches taken by the few governmental entities that are using GPI. For
example, Minnesota has used 42 GPI indicators and Maryland has used 26 indicators. Nova
Scotia has used more than 100 indicators for 20 key areas of health, environmental sustainability,
quality of life, equity, and economic security.

What indicators should be used to assess the well-being and viability of farms? Average
net income over time is important as it integrates the demand and market price for a product, the
cost of producing it, and the management capacity and natural resources of a farm or farming
region, as well as weather and other unpredictable conditions. The number of new farmers may
be an important attribute to assess future farm viability because it indicates the success of
transferring farmland and whether sufficient training and capital are available to support the next
generation of farmers. The percentage of agricultural fields covered with living plants over the
course of a year could be an indicator of vulnerability to soil erosion, loss of plant nutrients,
impacts on water quality, and long-term stewardship of health of soil. The ratio of fossil fuel

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energy consumed to food calories produced could shed light on the extent of energy efficient production practices and resilience in the face of fossil energy price hikes or shortages.

There is a large body of literature having to do with development, use and validation of indicators of agricultural sustainability, though social indicators have been less studied than agronomic, economic, and environmental indicators. Deciding which indicators to use to measure progress towards goals is more of a political than a scientific question in some ways. The combination of science, policy, and values is needed to develop widely used indicators for measuring progress towards sustainable food systems.

Box 4.3. Indicators and measures of good food. Suggested indicators of ‘good food’ were developed to reflect social and environmental values; that is, food that’s healthy, fair, green and affordable. Although many possible indicators were considered, priority was given to those that could be measured using existing data that are valid, reliable, and transparent.

**Health Indicators**

- Death rates of major diet-related disease prevalence are decreasing.
- Adult overweight and obesity prevalence are decreasing.
- Fruit and vegetable consumption meets current US dietary guidelines.
- The prevalence and cost of food contamination are decreasing.

**Fairness Indicators**

- Farmworkers receive wages sufficient to support a household for full-time work.
- The percentage of farmworkers hired through labor contractors is declining.
- Food system workers have safe, healthy working conditions.
- Average net farm income of small and mid-scale family farms matches or exceeds median national household income.
• Acreage of mid-scale family farms is holding stable.

• Farmers retain a consistent proportion of the food dollar.

Environmental Quality Indicators

• Farmland is remaining in production.

• Soil quality is improving.

• Water contamination by pesticides in agricultural areas is declining.

• The nitrogen balance of US farming systems is declining.

• Agricultural production emits declining amounts of greenhouse gases.

Affordability Indicators

• The prevalence of household food security is increasing.

• Increases in wages and salaries are equal to or greater than increases in food prices.

Market-Based Approaches to Diverse Values

What approaches are needed to allow food consumers to act in accordance with their values for a wide range of products, on a scale that significantly affects the food system? Part of the answer is increased access to information. Consumers need to know more about how their food is produced, by whom, and who benefits—without taking on a research project for every purchase. They need access to the types of food that align with their values, while farmers and companies making this food need access to the consumers who want to buy it. There are several marketing methods that provide the type of food and information needed to help shift the balance of values in our food system: direct markets, cooperatives, value chains and food hubs.

Direct markets are the low-hanging fruit of a more values-driven food economy, because they are relatively easy to develop and engage in. When consumers meet farmers and food producers (or their employees) in person it opens up a rich flow of information. Even with direct
web-based sales there is the opportunity for lots of transparency and interaction. Farmers’
markets, CSAs, farm stands, and internet sales provide farmers with a chance to cultivate
customer loyalty through personal relationships and disclosure of relevant information. However,
direct markets account for less than 2% of all agricultural sales, and involve only 5% of the
nation’s farms. So, even as direct markets grow, this approach must be complemented by
wholesale market strategies in order to increase the values-oriented portion of our food supply.
These strategies include wholesale cooperatives, values-based supply chains, and food hubs.

Cooperatives are by definition horizontal. By sharing decision-making and profits with
their membership, they fulfill a social mission that is different than returning value to outside
investors. The key difference is that members are likely to make decisions and use profits in a
way that strengthens the cooperative over the long term, first by simply staying in business, and
second by re-investing in their business.

There are many ways that agricultural cooperatives can be organized. For example a
group of dairy farmers can work together to brand and sell their milk as a marketing or producer
cooperative. Such cooperatives often highlight non-economic values like environmental
stewardship as part of their marketing strategy. If these farmers also own a processing plant to
make their milk into cheese they are also a value-added agricultural cooperative. Farmers that
buy equipment, fertilizer, seeds, and consulting services together are part of a purchasing
cooperative.

Values-based supply chains may be legally organized as cooperatives yet they go beyond
the common activities of co-ops by creating partnership across the supply chain. In other words,
it’s not just the farmers working together, it’s also the businesses that process and market and
distribute their products. This requires development and branding of ‘differentiated products’ for
wholesale markets. Differentiation can include culinary product attributes such as superior flavor, production attributes such as organic or sustainable methods, and social attributes like family farming and/or fair trade. This differentiation, if it resonates with consumers, can have a positive influence on the bottom line for farmers and their partners, while also supporting environmental and social goals.

Food hubs are another form of cooperation among producers, and often buyers, which are formed to facilitate aggregation and distribution of products in a community or region. Food hubs are not necessarily formal cooperatives; they have a variety of business structures, both for-profit and non-profit. Many are providing wider access to institutional markets for small to mid-sized producers. Many if not most are also mission-driven, with goals to increase access to fresh healthy food for consumers, provide higher quality food for underserved and at-risk populations, help maintain the working landscape, and/or create new economic opportunities for farmers using sustainable production practices. Food hubs often have their own brand, and many use online platforms to facilitate connections between buyers and sellers, as well as to support educational or technical services they may provide. Food hubs typically are engaged with other organizations that promote local food and entrepreneurship in some way, including agritourism, farm-to-school programs, food safety training, and urban agriculture.

Box 4.4. Defining characteristic of a regional food hub. Regional food hubs are defined less by a particular business or legal structure, and more by how their functions and outcomes affect producers and the wider communities they serve.

- Coordinates aggregation, distribution, and marketing of primarily locally/regionally produced foods from multiple producers to multiple markets.
• Considers producers as valued business partners instead of interchangeable suppliers and is committed to buying from small to mid-sized local producers when possible.

• Works closely with producers, particularly small-scale operations, to ensure they can meet buyer requirements by either providing technical assistance or finding partners that can provide this technical assistance.

• Uses product differentiation strategies to ensure that producers get a good price for their products, such as identity preservation, group branding, and sustainable production practices.

• Aims to be financially viable while also having positive economic, social, and environmental impacts within their communities.

Incremental changes in our current methods of production and consumption will only temporarily sustain an unsustainable food system dominated by a focus on short-term profit rather than long-term, multi-faceted wellbeing. Development of compelling and consistent measures of progress will help drive wider consideration of the environmental and social values embodied in food. These values are best supported through horizontal networks comprised of mutually beneficial, durable and transparent relationships all along the value chain, from farmer to consumer.


3 ETC Group. Putting the Cartel before the Horse ...and Farm, Seeds, Soil, Peasants, etc. Communiqué number 111, Ottowa, Canada: ETC Group, 2013.


