



Systems Thinking for Community-led Food Systems

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Abstract: The pandemic has shown us once again that our current, increasingly centralized food system not only fails to meet the basic requirement of ensuring year-round affordable access to nutrition rich food for all, it has proven to be catastrophically non-resilient to shocks. In the run-up to the United Nations Food Systems Summit, various experts are seeking “game changing innovations,” i.e. new, top-down, “silver bullet” solutions. Yet we argue that what’s missing in the discussion of food systems is **systems thinking**. Over the past 100 years, pioneering social movements, civil society organizations and some governments have shown time and again that integrated, community-led solutions offer a more resilient, more equitable and more nutritious basis for national and global food systems. We explore what is required to strengthen this approach and provide a top-10 list of recommended actions.

Introduction: Recent Steps in Localization

How should the growing policy focus on localization shape the upcoming Food Systems Summit?

Issues of localization have become a mainstream topic of development with the adoption of the Sustainable Development Goals (UN 2015a), which included targets for participatory decision making and sustainable communities. The Addis Agenda for Action committed donors to scaling up support for local authorities (UN 2015b). In the run-up to these goals, then-UN Secretary General Ban Ki-moon called on world leaders to “define a clear path to a better future — a future of integrated solutions to interrelated problems” (Ban 2011) and to “unlock local solutions” (Ban 2015).

This coincided with the emergence or growth of more than 20 networks, coalitions and platforms devoted to shifting power to local communities (MCLD 2016) – several using the hashtag #ShiftThePower. USAID launched Local Works and the World Bank doubled the size of its Community-Driven Development portfolio, shifting from a “project” to “program” focus. The UN System identified community engagement as a key accelerator for achieving the health SDG, and Unicef adopted minimum standards for community engagement in all its programs.

As the COVID-19 pandemic struck and as outside experts were pulled out of communities, community leaders stepped forward to protect their neighbors. (SSIR 2020). At the end of 2020, Devex founder Raj Kumar stated that while COVID-19 may have set back progress by a decade, it had probably **accelerated the transformation of development** by a decade.

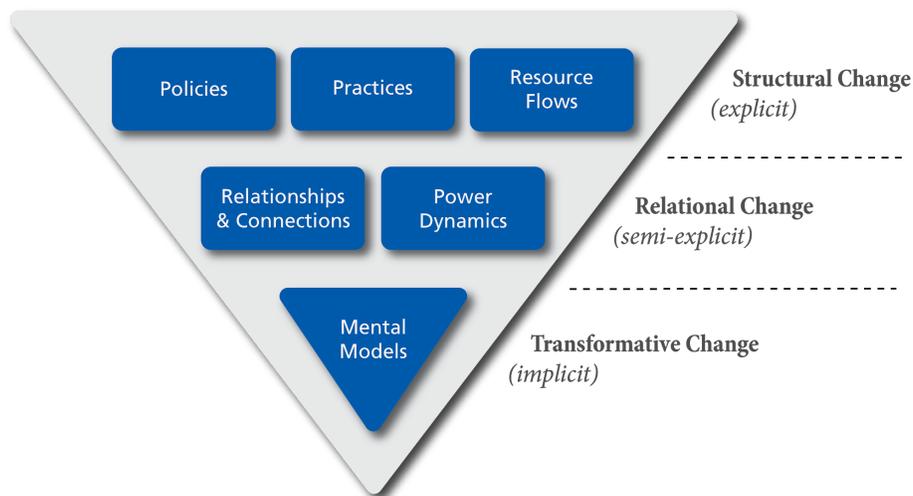
This growing focus on localization has enormous implications for food systems, a field that is inherently multisectoral and should benefit enormously from a **systems thinking** approach that centers on local production and consumption.

Applying a Basic Framework for Systems Thinking

The late Donella H. Meadows was a pioneer in systems thinking. Her posthumous primer, “Thinking in Systems” states:

“Hunger, poverty, environmental degradation, economic instability, unemployment, chronic disease, drug addiction, and war, for example, persist in spite of the analytical ability and technical brilliance that have been directed toward eradicating them. No one deliberately creates those problems, no one wants them to persist, but they persist nonetheless. That is because they are intrinsically systems problems – undesirable behaviors characteristic of the system structure that produce them. They will yield only as we reclaim our intuition, stop casting blame, **see the system as the source of its own problems, and find the courage and wisdom to restructure it.**” (*Emphasis mine*).

Meadows lists 12 leverage points for restructuring systems. The more recent *Water of Systems Change* (FSG 2018) offers a streamlined, but similar, approach with 6 elements across 3 levels:

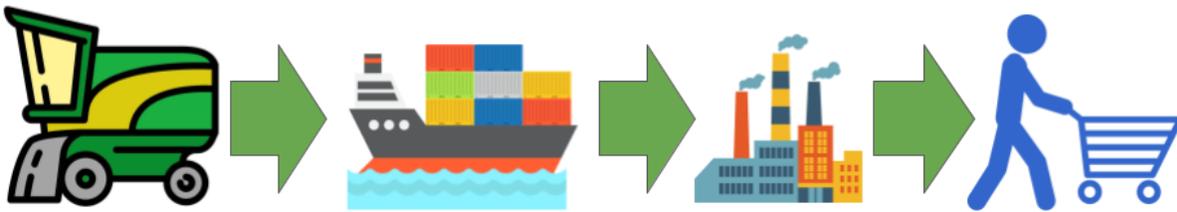


Writers often make recommendations at the explicit, structural change level (policies, practices and budgets), which never transpire because of the underlying human factors that shape, limit and give rise to the top level. The starting point needs to be the “Mental Model” or paradigm within which the thinking is done.

The prevailing paradigm of our food system

The Current Mental Model: The prevailing paradigm for nearly all social and political activities continues to be top-down, centralized command-and-control – or we would say patriarchy. It is reminiscent of the old colonial model - extract resources from remote areas to serve the needs

of those nearest the king - translated into a vision of global industrial-scale farms serving urban consumers through a system of competitive global trade. *(All figures below by the author).*



Rising inequality, environmental destruction and high vulnerability to shocks and disruptions are all consequences of this paradigm.

Systems thinkers from the 1960s onwards, such as Amory Lovins and Paul Baran, have been aware of this problem with centralization. The writer Carl Steiner summarized them concisely: “Whereas centralized systems are more vulnerable to fluctuations, less able to adapt to changing conditions, and often imply large capital investment in both the system itself and its supporting infrastructure, decentralized or distributed systems tend to be more flexible, able to adapt to local conditions, and can take advantage of mass production and modularity to be cheap and accessible.” (Steiner 2013).

Right Sizing the Food System: Understanding Subsidiarity

If “one giant global marketplace feeding everyone” isn’t the right paradigm, what is?

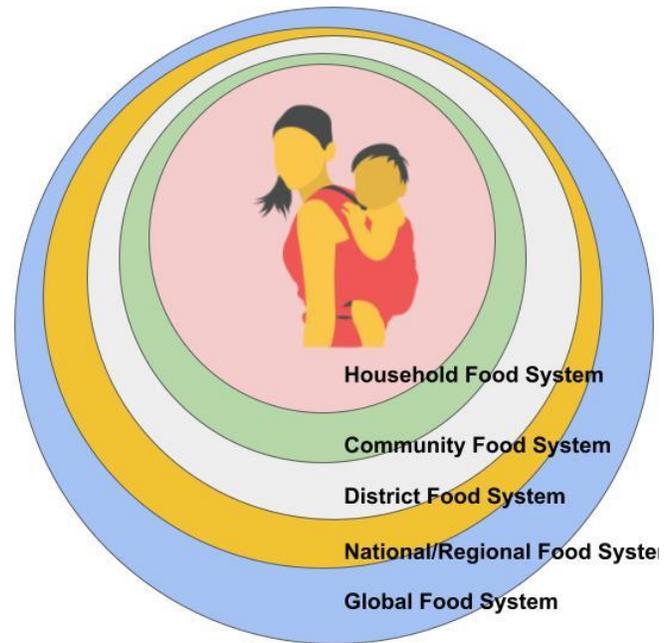
First, we must recognize that the paradigm of a global food system is an illusion. The UN reports that **70-80% of the world’s food comes from family farms** - the 500 million small-holder farmers (SOFA 2014).

In addition, and perhaps counter-intuitively, **food farmers are the majority of the world’s malnourished people**. (IFPRI 2004). So, whatever the current food system *is*, isn’t working for the world’s hungry people and those struggling to feed them.

Witness the protests by farmers in India over proposed changes to shift India’s farm policies in a direction they perceive as favoring the industrial model. India is not alone in this situation – many low-income countries remain in a neo-colonial model of agriculture that favors urban consumers who have the political power, and the export market.

Subsidiarity is an organizing principle that matters ought to be handled by the smallest, lowest or least-centralized, competent authority. Political decisions should be taken at a local level, if possible, rather than by a central authority. In Catholic Social Teaching, this is the only way to structure society consistent with **human dignity** as it maximizes the agency of each human person (Pius XI, 1931).

Household food equity - the gender dimension: The Household Food System for an impoverished rural farmer - the majority of whom are women - is the distance she can walk with a baby on her back. Within that distance, there may be no markets with diverse offerings, no food processing machinery, storage facilities, financial services or health clinics offering nutrition education. These governance and market failures are compounded by patriarchal social structures that limit her mobility and deny her voice in the decisions that affect her life.



Focus on the community: Despite the saying “it takes a village,” we find that most traditional villages are too small - perhaps 100 households - to manage public services or to interface effectively with the district administration. Experience has shown that “it takes a cluster” of villages – such as India’s panchayats or Africa’s “epicenters” facilitated by The Hunger Project (THP 2019) – within walking distance (a 10 km radius) with a population of 5,000 or more, to manage public services. Indian panchayats, for example, have been based on this principle for thousands of years. In impoverished communities there is often a gap between communities and the bottom tier of government administration, typically the district, which renders people powerless to exert influence. (UNSCN 2019).

Human Capital and Bridging the Power Dynamics Gap to the District

Countries with high levels of persistent hunger are also those with underfinanced (or a complete absence of) subdistrict public services. Where there is strong subdistrict government, such as in the Kerala State of India or many of the counties of Kenya, those communities are able to generate highly creative and effective food systems.

- **Community food processing equipment** such as grain mills, that dramatically reduce drudgery.
- **Community food banks** where farmers can store staple crops after the harvest when prices are low, and sell when prices are higher – as well as meeting annual shortages right before harvest, thus reducing indebtedness.
- **Farm input loans, cooperatives or other market arrangements** that help eliminate exploitation by middlemen and further indebtedness.
- **Collective demand on district resources.** When communities are well organized, they can exert demand and leverage from scarce district human resources, such as farm

extension services, veterinary services, etc. that often are captured by the larger more influential farms.

A successful **community-led food system must address 12 of the SDGs**, particularly for women as they bear the traditional responsibilities for producing, processing and preparing food.



SDG1: No Poverty. Farmers must earn sufficient cash income for needs they cannot meet themselves, and local financial services for purchasing inputs and protecting savings.

SDG2: Zero Hunger: The community must be able to produce, process and store nutritious food all year at affordable prices.

SDG3: Health: Good maternal nutrition, especially in the 1000-day window from conception to her child's second birthday, requires more than food: it requires access to pre- and post-natal health care. (Lancet 2008). Community health centers are also the key source of nutrition education, creating demand for nutritious food and overcoming harmful food taboos.

SDG4: Education: Farmers need a continuous flow of information on the latest practices and techniques optimized for adaptation to climate change.

SDG5: Gender equality: As described in detail in the next section, entrenched discrimination against women is an enormous barrier both to increased food production and nutritional consumption patterns.

SDG6: Water and Sanitation: Ready access to clean drinking water and safe sanitation are key nutrition-sensitive interventions to prevent malabsorptive hunger due to water-borne disease. Small-scale irrigation is critical for production and resilience. In addition, women's productivity is harmed when they must spend hours a day hauling water. (Lancet 2013).

SDG7: Energy: Safe and sustainable energy for processing and cooking food is required and, like water, searching for firewood limits hours of productivity.

SDG8: Thriving rural economy: Community food systems require strategies to interface to the wider marketplace where farmers can buy and sell without exploitation, often through cooperative enterprises.

SDG10: Reduced inequalities: Rural communities in low income countries lack a fair share of public resources and public resources compared to urban centers.

SDG11: Sustainable communities: Rural communities require information, skills and resources to risk reduction and disaster preparedness.

SDG12: Life on Land: Small-holder farmers must be able to improve and protect their soils, sustain woodlots, follow agro-ecological and regenerative practices and protect clean air from improved cookstoves.

SDG16: Good governance: To coordinate and drive progress on all these fronts, rural communities must have adequately financed and competent local governance. Women must have access to justice when her rights are violated, such as when there is a lack of public safety. This includes local civil society through which she can exert her collective aspirations and hold local government to account.

Community Power Dynamics: Action for Gender Equality

Community Food Systems are highly constrained by unjust and deeply entrenched gender norms. Studies have shown that if women had equal access to agricultural inputs as men, that alone could reduce the number of hungry people by 150 million. (SOFI 2016). The USAID/IFPRI Women's Empowerment in Agriculture Index highlights five domains of women's engagement in agriculture (IFPRI 2012) shown below. Along these dimensions, there are numerous examples of community-led interventions that significantly reduce gender discrimination.

- 1. Community leadership:** Community-led development is a facilitated process. It begins by *requiring* equal participation by women and men, and creating collectives of women (where they are missing) that can establish unified demands by women in the community and democratically select women for community roles where equal leadership is required.
- 2. Time poverty:** Rural women often work twice the hours as men, due to long-established gender roles. Eventually, communities with women's leadership witness shifts towards greater fairness in responsibilities. In the meantime, focused attention to reducing drudgery through improved appropriate technology can quickly and dramatically reduce women's time poverty, as can co-locating all public services to reduce travel time.
- 3. Access to and decision making power over productive resources:** Village savings and loans (VSLs) and women-run cooperatives can rapidly increase women's access to financial services, farm inputs, farm extension services and markets.
- 4. Decisions about agricultural production:** Diverse barriers to women's success in higher-value production continue, and have been well studied by Quisumbing et al (IFPRI 2015) who show how adaptive measures in gender-responsive projects can encourage gender-equitable outcomes.
- 5. Control over use of income:** Analysis of survey data by Njuki, Doss and Boote show that women who are old, have more education and more control over resources are more likely to control income. When they do, it strengthens their agency, improves the

wellbeing of their families and increases their stake in the agricultural sector and increases investment (IFPRI 2019).

“Right Relationship” to National and Global Markets

The principle of subsidiarity encourages us to identify what things are best handled at which level to build the most humane, just and resilient food systems. There are clearly advantages for even the smallest communities to have linkages to the larger tiers of the food system, as long as those linkages do not harm their own food system and its resilience.

Tier	Key Roles	Pathway for Linkages
Household	<ul style="list-style-type: none"> ● Production ● Consumption ● Intrahousehold equity 	<ul style="list-style-type: none"> ● Citizen engagement ● Membership in cooperatives and associations ● Nutrition education
Community	<ul style="list-style-type: none"> ● Employment ● Production ● Processing ● Storage ● Multisectoral Integration ● Nutrition Education/Behaviors ● Farming practices 	<ul style="list-style-type: none"> ● Community Council to District Government; ● Cooperatives and associations federated upwards; ● Social accountability mechanisms; ● Digital access to information and bankings.
District	<ul style="list-style-type: none"> ● Diversified Markets ● Professional Expertise ● Enforcing laws and standards ● Planning and Monitoring ● Public Safety 	<ul style="list-style-type: none"> ● Voice with ministries and parliament; ● Partnerships with private sector and universities; ● Rural Infrastructure
Nation/ Region	<ul style="list-style-type: none"> ● Production of inputs ● Laws, regulations and standards ● Devolution of public resources ● Taxation ● Protection of human rights ● Safety Nets 	<ul style="list-style-type: none"> ● Transparency ● Links to Bilateral and multilateral institutions. ● Links to regional and global trade
Global	<ul style="list-style-type: none"> ● Global monitoring and warning systems ● Support for safety nets ● Shared best practices and standards 	<ul style="list-style-type: none"> ● Transparency ● Rules-based trading rules

Ten Actions to #ShiftThePower to Community-led Food Systems

The incentives to hold top-down systems in place are strong. However, there are many strategic steps communities and their champions can take to #ShiftThePower to stronger, more resilient, community-led food systems.

- 1. Massively invest in the promotion of high-nutrition local foods.** As highlighted in the 2020 SOFI report, the incentives in farming must shift to make nutrition-rich food more affordable. One sure way to do that is to promote locally-grown, nutrition rich foods. Biofortification allows this to be “local” rather than process-fortification common in industrial food systems. Inspiring examples include how indigenous communities in Peru have reclaimed nutritious traditional foods which not only nourish the body but reclaim greater dignity.
- 2. Emphasize and promote integrated local solutions.** The entire concept of “localization” has gained more and more traction, whether in relation to Universal Health Coverage, humanitarian response or other sectors. All these share a need to overcome the top-down status quo by emphasizing the imperatives of community ownership, resilience and the multisectoral nature of nutrition and health.
- 3. Mandate gender equality in all programs and governance.** When women lead, communities improve, and communities are where most women can gain voice, leadership and political experience.
- 4. Campaign for devolving a “fair share” of public resources – at least 20% – to the sub-district level.** Communities cannot develop resilient food systems – including processing and storage facilities – without funding. Assuming the poorest communities will generate the tax revenues they need is unlikely and unjust. Civil society and local governments can campaign for greater devolution. Some of the strongest arguments have been a) reducing political violence by ensuring every group has a path to achieve its aspirations; b) resilience through decentralized capacity and production; c) broad-based economic growth. The African Union has declared to move in this direction, though there has been little progress to date (AU 2014).
- 5. Co-locate public services.** Health centers, for example, can become the “anchor” for integrated rural public services, including child care, adult education, local governance, agricultural training, food processing and storage and other essential components of community-led food systems.
- 6. Peer learning.** Communities can learn best and fastest from visiting and learning from successful communities.
- 7. Invest in grassroots civil society.** All development practitioners (donors, NGOs, associations) should always focus on building local capacity rather than delivering services. A recent CARE report points out, for example, that of all the ODA tagged for gender, less than 1% goes to grassroots organizations. Dramatically increasing the pace of localizing food system investments can have an enormous impact on the sector that produces most of the world’s food!

8. **Leverage digital.** Nearly every government and business can see the advantage of ensuring that everyone has internet access and mobile banking. Economists have shown that economic growth is linked to bandwidth. (Friedman 2005). For example, a cost-effective route to safety nets that leave no one behind is for everyone to have mobile banking, and many organizations are using mobile phones to leverage agricultural extension.
9. **Strengthen social accountability and transparency in both the public and private sectors.** Trust in institutions is an important issue. People tend to place more trust in local compared to national institutions, and that trust depends strongly on satisfaction with public services. Corporate advisors such as the Edelman Trust Barometer global report encourage institutions to focus on improving conditions in local communities. (Edelman 2020).
10. **Improve District Linkages.** The gap between district resources and small-scale farmers is one area where both grassroots people and community leaders can achieve rapid improvements in ways that are sustainable, as local government institutions have long lives.

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