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Feeding Hanoi's urbanisation: What policies to guide the transformation of the urban food system?

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LESSONS FROM TRADITIONAL FOOD SYSTEMS CAN INFORM THE PATH TO MODERNISATION

In countries experiencing rapid urbanisation, there is a question of which path for urban food systems to follow. Southern countries, such as Vietnam, seem to favor modernisation to enhance market efficiency and food safety. Yet this same path is questioned today in developed countries for its tendency to result in longer chains between producers and consumers and its inability to correct negative environmental impacts and to distribute benefits to all stakeholders. Studying the transformation of Hanoi's food system gives an opportunity to examine the question "how do we build a modern urban food system without irreversibly losing the 'working' characteristics of the traditional system such as mutual trust between its stakeholders, from producers to consumers?"

TRANSFORMATION OF THE FOOD SYSTEM AFFECTS ACTORS ALONG THE SUPPLY CHAIN AND BEYOND

Though modernisation of the food system potentially brings advantages for some consumers, producers, and vendors in terms of food safety and market opportunities, modernisation—through for instance Safe Vegetable and Supermarket Policies, or changes in land use—does not guarantee improved outcomes for all stakeholders along the supply chain. The Hanoi case suggests that transition in the food system, whether mandated or spontaneous, gave rise to new challenges to consumers in the form of food price and quality, to farmers facing difficulties meeting new standards, and to supply chain workers whose livelihoods are threatened.

LOCAL GOVERNANCE PLAYS A KEY ROLE IN REDUCING STAKEHOLDERS' UNCERTAINTIES

Policymakers must recognise that the modernisation of food systems reorganises the supply chain, often beyond anticipations. Responding to evolving and heterogeneous uncertainties of participants in the food system is one task for policy planning, implementation, and evaluation. To do so they must rely on existing knowledge and networks, and foster trust and buy-in from all actors, farmers who need tools for planning, vendors or transporters and consumers who will ultimately drive the success of any food policy.

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1. INTRODUCTION

In the coming decades, the world will become increasingly urban, with millions of individuals migrating to metropolitan centers around the globe. By 2050, 70% of the population worldwide will live in urban spaces (World Health Organization, 2009). As the preponderance of humanity converges in cities, the question of how to feed and sustain a new urban generation figures prominently on the agenda for policymakers. In both the global north and south, governments face major challenges in building urban food systems that guarantee food and nutritional security for citizens, while simultaneously meeting social, economic, and environmental goals.

These issues are present in urban food systems worldwide, but they are most acute in *urbanizing* food systems, those urban centers particularly in the global south that are growing rapidly, but where needed social and political reforms almost inevitably lag behind the very rapid pace of urban and economic change (Satterthwaite *et al.*, 2010). What policies will prove most effective in governing these dynamic urban food systems? What principles should guide local governments in conceiving policies in this moment of urban transition?

Vietnam's capital of Hanoi provides one entry point into the challenges of governing urban food systems reflected in cities around the world. Urbanisation in Hanoi is taking place at a rapid pace, with an annual 3.35% population growth rate, far outstripping the global average of 1.5% (World Bank, 2011, and World Health Organization, 2009). Historically, approximately half of food consumed in Hanoi, including vegetables, cereals, and meat, was produced in the periurban area near the city, with the remaining half imported from other provinces within Vietnam (Anh *et al.*, 2004). The supply chain linking farmer and consumer has been largely informal, with an intricate network of transporters, wholesalers, and vendors delivering products to Hanoi. Food hygiene and safety, particularly related to pesticide use, as well as freshness, linked with the time lapse between harvest and consumption of food, have been recurring problems for the traditional supply chain. Now, as the city's population is exploding, the task of securing Hanoi's food supply for a growing number of consumers and simultaneously addressing the residual problems of food safety is becoming more complex.

In the midst of urbanisation, a decreasing share of nearby land is devoted to farming, with agricultural land in the Hanoi region decreasing 9 percentage points in recent years (Sautier *et al.,* 2012). Further, the supply chain linking rural farmers to urban consumers is lengthening and becoming more complicated. A profusion of additional "middlemen" have emerged to deliver products across the increased distance from farm to market. Thus a combination of reduced production in proximity to Hanoi and longer supply chains could give rise to new difficulties ensuring a safe and sufficient supply of rice, vegetables, fruit, meat, and dairy to sustain the city.

It is exactly in that regard that the Vietnamese government's plan for Hanoi is illustrative of a project of modernisation of the traditional, complexified food system. The Vietnamese government has taken measures to govern the food system in Hanoi, with an eye toward feeding the growing population, but also toward building more efficient and hygienic food markets in the region. Yet interviews with stakeholders reveal that modernisation policies have not fully met their objectives. Interviews with policymakers as well as farmers, collectors, vendors, and consumers conducted over two months in the summer of 2012, point to a food system facing a proliferation of new risks, with the possible unintended consequence to disorganise the food system rather than guiding

its transformation towards a safe, sufficient and stable supply.[1]

This paper unpacks the effects of local policies governing Hanoi's food supply and provides an example of the uneasy relationship between modern and traditional food chains, with a focus on the vegetable supply chain. The experience of Hanoi signals the need for new criteria for evaluating food systems, incorporating uncertainties that stakeholders face along the supply chain. Finally, the case offers insights into the factors local governments should consider when developing policy for an urbanizing food system.

2. THE CURRENT DEBATE ON URBAN FOOD SYSTEMS

The current debate on urban food systems centers around two pressing questions: i) How to feed the exploding urban population in a sustainable way, meaning it is "economically efficient, socially just, and ecologically sound," and also stable in the long run? (Morgan, 2009, p.347). ii) What mix of policies and governance will effectively guide urban food systems already in the midst of transformation toward that end?

2.1. Feeding a growing urban population

Policymakers, even at the urban government level, must take seriously food provision and governance as a result of what Morgan and Sonnino call the "new food equation" (2010). The new food equation includes the following developments: the 2007-2008 food price spikes which saw doubling or tripling of prices for commodities like wheat and rice, the emergence of food security as a national security issue in the wake of food riots, climate change effects expected to negatively impact ecosystems everywhere but especially in developing countries, escalating land conflicts in Africa and Asia reflecting competition for natural resources, and rapid urbanisation, which brings attention to the potential for food shortages in cities (Morgan and Sonnino, 2010). These five trends underscore the complexity of emerging challenges in securing food supplies, and point to the urgency of smart food planning.

Food planning begins with agricultural production. Governments must consider how farming will meet the needs of their populations, both rural and urban, in the coming years. Given urbanisation's dual forces of an increase in the number of people in a concentrated space with a decrease in the amount of agricultural land, cultivating more food in less space appears critical to supplying urban food systems in many regions of the world, particularly in developing countries. Intensification of agriculture, which incorporates sustainable soil, water and pest management will be key to producing the food that urban dwellers will demand in the coming decades (FAO, 2011). Intensified agriculture also provides opportunities for increased income and access to food for agricultural producers in rural areas. Sustainable intensification has direct effects on rural income and food access, and thus the way urban food systems develop can play a crucial role for the pathway of development for the poorest agricultural producers in the hinterland of these cities

In addition to boosting production and promoting economic development in rural areas, there is increasing emphasis on the importance of urban agriculture. Production taking place within cities, whether in urban plots, on rooftops, or in backyard gardens, has the potential to play a significant role in feeding cities (Bricas *et al.*, 2003; FAO, 2010), particularly as they could rely on innovative ways to link producers, processors, retailers and consumers, and also contribute to social links within cities. Thus a mix of production in both rural and urban areas is suggested as means to strengthen the production side of urban food systems.

Central to the question of food production is the issue of agriculture's impact on the environment. Intensification of agriculture through the use of chemical fertilizers, pesticides, and irrigation technologies, can have negative impacts on the environment, particularly if farmers lack training or capacity (Pinstrup-Anderson and Pandya-Lorch, 1994). Both production and distribution of food risk degrading natural resources, and are central concerns for building a lasting and resilient urban food system. Again, the urban food system plays a key role in the environmental impacts. Analyses on nitrogen fluxes conducted on the Paris region show how urban consumer choices, concerning, for instance, livestock fed with imported grains

1. This study employed an organisational analysis of collective action to understand the issues from the perspective of actors along the supply chain. Semi-structured interviews with a broad set of stakeholders paint a portrait of the policy system (Crozier and Friedberg, 1977). In the course of two months in Hanoi, a total of 60 interviews and several ethnographic observations along the supply chain informed the analysis. The study also used Crozier and Friedberg's approach to organised action in the analysis phase, employing the concept of "relevant uncertainties," or problems that actors face in achieving goals. Tracking actors' perceptions of how the uncertainties in their lives are evolving offers one measure of the impact of policy, which can complement other frameworks for policy analysis, such as quantitative analysis or impact assessment.

from other continents, directly impact the quality of water in both the Parisian region and the meat-producing Bretagne region (Billen, 2012).

Beyond production, there are new developments in consumption equally relevant to the challenge of feeding urban populations. Eating habits in cities are shifting quickly. In cities worldwide, diets are becoming increasingly diverse, with staples like rice or grains being supplemented with more vegetables, fruit, meat, and dairy products, as well as processed foods and sugar (Dixon *et al.*, 2010). The result is a paradox where there remain communities severely lacking for basic food, but a simultaneous rise in unhealthy eating, obesity, and non-communicable disease, sometimes within the same community (Global Development Podcast, 2012). Consumer demand for more varied foods puts new pressure on the food system, which must deliver greater quantities and higher value products to cities. The capacity to influence food consumption patterns towards nutritionally healthier and more sustainable diets is therefore a challenge not only for policy makers at the global scale, but also for municipal authorities that are often in charge of health and social services.

Food prices for consumers represent a final challenge in feeding cities. In the wake of the food price spikes in 2007-2008, policymakers remain wary of volatility in food prices (Timmer, 2010). In cities, an increasing number of consumers rely on commercial food supply, rather than growing food themselves, which puts more upward pressure on food prices (Stage *et al.*, 2010). Rural-to-urban migrants that participated in agriculture in the hinterlands have not only stopped producing food in their transition to the city, but also add to the mushrooming demand for food from retailers and vendors in cities. In some places, particularly in Africa, rising food costs in cities are occurring simultaneously with the "urbanisation of poverty" (Morgan, 2010). As greater numbers of people flock to urban centers seeking opportunities, a new urban poor will face the challenge of accessing food at higher prices in cities.

2.2. Governance to build sustainable urban food systems

Governance of the complicated system of production and consumption is a major question for decision makers and scholars. Many emerging initiatives and thinking promote a decidedly local approach to growing and eating food, with food and agricultural policies being developed at various types of local government. Interest in "regionalizing" the food system is linked to the idea that agro-industrial food systems have not provided nutritious, sustainable, and equitable means to food provision (Donald *et al.*, 2010). Food security "from below" and short supply chains have become tenets of a food justice movement, particularly in the global north (Wekerle, 2004).

Beyond a short chain between farm and fork, localism implies a central role for local planning and governance of the food system, even if a larger range food imports are also considered in the overall balance. Although urban food supplies may become increasingly connected with outside markets, local governments play a pivotal role in assessing the food security situation and orchestrating production and market possibilities to satisfy consumers. City governments have the ability to "re-examine the mix of food supply sources to people's needs and demand, adapt to local climate volatility and economic volatility" (FAO, 2011, p.31). Local governance has been put forward as structure for managing the social, economic, and ecological factors embedded in urban food supply and consumption, which implies that local governance must pursue multi-dimensional outcomes for food systems.

Between the enthusiasm for locally rooted food systems, based on redefining the governance of food systems, rather than on the conviction that everything can and must be produced locally—and acknowledging that the local initiatives can guide a specific context, but not transform the longer internationalized supply chain—urban food systems emerge as a key leverage point. Governance of urban food systems is an opportunity to guide and influence the pathway of development within a city and its surrounding region. While the ambitions are limited to the regional context, within this space there is the capacity to orient the food system toward more sustainability, and ultimately define the ideal food system for a specific place.

What is the future of urban food systems? How will projects of modernisation to improve efficiency and safety in urbanizing food systems contend with traditional supply chains? How will emerging local food policies try to give a key role to local producers and to shorter supply chains with fewer intermediaries? What policies are most effective in influencing the transformation of traditional food systems that must now stretch to meet new demands in the urban context? These are the kind of questions that this paper addresses.

Local governance of an urbanizing food system represents the core issue this paper addresses. In urbanizing cities, given the shifting landscape of production and consumption, how can local governments manage the process of feeding the city? Is there a path forward to harmonize the seemingly contradictory needs of multiple stakeholders? The

case of the food system in rapidly urbanizing Hanoi provides an example of the challenges and opportunities inherent in governing a rapidly changing food system.

3. HANOI'S VEGETABLE SUPPLY: A PORTRAIT OF AN URBANIZING FOOD SYSTEM

The vegetable system in Hanoi is undergoing significant transformation in the face of urbanisation. A system based on a short supply chain and trust relationships between actors is giving way to a modern and regimented supply chain.

3.1. Setting the scene

Historically in Hanoi, vegetables have been delivered via a short supply chain to the city. A 2004 study found that 40% of vegetables eaten in Hanoi were grown within the city limits (Anh *et al.*, 2004). Farmers in the urban and periurban area grow vegetables like water spinach, carrots, cabbage, tomatoes, and squash. "Collectors" pick up the vegetables from farmers and transport the products to the city's wholesale markets by motorbike at night. From Hanoi's four primary wholesale markets, the products are sold to vendors in small neighborhood markets throughout the city and to "ambulatory" vendors on bicycles. Restaurants and canteens also stock their vegetables from wholesale markets. The entire process is quick, with a tomato harvested in the outskirts of Hanoi one evening appearing in a neighborhood market the next morning.

In this informal supply chain with a multiplicity of players, trust between actors naturally becomes crucial and the only way that participants along the supply chain maintain their business. A succession of relationships allows consumers to have confidence in the safety and quality vegetables they receive. *Nguoi quen,* or acquaintance relationships, characterize each transfer along the chain, with producers, transporters, or consumers relying on the same acquaintance to supply food for years. Thus relationships between actors along the supply chain serve as a guarantee mechanism and ensure stability along the chain.

In recent years, however, the traditional chain is undergoing a combination of spontaneous and mandated changes. Farmers have begun shifting their cultivation from staples like rice to higher value products like fruit, vegetables, and flowers. These higher value products meet new consumer demand, but also imply an increase in food prices. Collectors too have changed their method by connecting with a larger network of farmers, as production is pushed farther from the city center. Finally, consumer demand for a variety of food products is matched with rising concerns about the vegetable safety in the wake of a spate of food poisonings related to pesticide misuse (Pham *et al.*, 2009). These new developments in the food system—greater diversity of products, longer supply chain, and demand for safety assurances—represent key shifts in Hanoi's food system and raise the question of how modernisation policies or projects can be designed without increasing the risks for stakeholders along the supply chain.

3.2. Policy context

Beyond the spontaneous changes occurring in Hanoi, government policy has played a role in shaping the new form of the urban food system. Three policies directly impact the governance of Hanoi's food system: i) a supermarket policy that promotes the expansion of supermarkets and includes plans to eliminate informal markets for food distribution; ii) a safe vegetable policy that encourages "safe" vegetable production and standardisation of the supply chain; and iii) the Master Plan for 2030 that envisions radical changes to land use, converting agricultural land to commercial, industrial, or residential use.

These policies envision a formalized supply chain that conforms to global standards, improved hygiene and safety controls, and to a larger urban area in Hanoi province, with farmland pushed farther from the urban center.

3.2.1. Supermarket Policy

Supermarkets are relatively new in Vietnam, where the vast majority of households (95%) buy food from informal, outdoor markets in the neighborhood, or from mobile vendors selling goods by bicycle or on foot (Moustier *et al.*, 2009). The Ministry of Industry and Trade intends to promote the growth of supermarkets and significantly reduce the number of neighborhood markets, which are considered by the government to be disorganised and unhygienic, but which nonetheless serve most people's food needs.

3.2.2. Safe Vegetable Policy

In response to a spate of food poisonings and foodborne diseases in recent years, the government has attempted to enforce new hygiene and safety standards through certifications. The standards are particularly focused on pesticide use, which has been documented to be overused by some farmers (Pham *et al.*, 2009). Some agricultural communes have been certified as safe vegetable producers,

meaning that farmers undergo training, use controlled pesticides at recommended doses, and vegetables produced are approved to supply public institutions like hospitals or canteens.

3.2.3. Master Plan to 2030

Land use is centrally controlled in Vietnam, with the national government leasing out land to households and individuals for twenty-year periods. Thus land conversion from agricultural use to industrial, residential, or commercial use rests under the purview of the state. The Master Plan envisions massive changes in the composition of land use, with nearly a 30% decline in the amount of agricultural land in Hanoi province before 2020 (Sautier *et al.*, 2012). This implies a significant reduction in the agricultural production close to Hanoi, although a planned "green belt" does reserve some space for safe vegetable production.

The modernised supply chain encapsulated in these three policies has potential to improve the quality and safety of products available for consumers in Hanoi, and to build new markets in Hanoi. Yet a closer look at the food system reveals that the impact of the three policies is not entirely straightforward, and the proposed changes could in fact introduce new uncertainties in the system.

3.3. Consumers face new uncertainty in food price and quality

For consumers, there are both positive and negative impacts of the new policies. Safe vegetable policy, if it is scaled up to cover a relevant proportion of food, and if accepted by the population as a guarantee for safe vegetable production, could improve consumer health. This requires a major expansion of the current policy, which for the time being represents less than one percent of agricultural production nationwide in Vietnam (Anh *et al.*, 2012).

In the interim, for reasons derived from both policy action and also spontaneous transformations in the food system, consumers face uncertainties connected to increased prices and unreliable food quality. Both safe vegetables and supermarket vegetables are more expensive than traditional sources. Higher prices for vegetables are especially burdensome for poorer consumers, who note that they can "replace" luxury foods like meat or seafood with cheaper foods in a pinch, but vegetables and rice are core elements to any meal and must be affordable. Supermarket prices are significantly higher than traditional markets, as much as 40% higher for staple foods (Figuié and Moustier, 2009). As a result, supermarkets currently represent only a small fraction of food purchases for Hanoians.

Interviews along the supply chain echo uncertainties for different actors

"I feel that if the government takes our land, we won't have a job, even if we are compensated...we feel we have to work very hard because we don't have another job to do. (Farmer, Ha Hoi)

"All people buy vegetables outside in the regular market because they think it's fresh and vegetables don't last for a long time. In the supermarket, they have a way of making vegetables last, but it's not as delicious." (Vendor, Hanoi)

"We know the risks about vegetable safety, but actually now we have to accept the risk. The government doesn't have a barrier to ensure production is safe. We bet on the long relationships between local people and their suppliers. They are ensured by local people that they buy a good product, because they buy from acquaintances [nguoi quen] of local people, which reduces the risk of unsafe food. (Local People's Committee Official)

In addition to expecting low prices, consumers in Vietnam are ardent about "freshness" of vegetables. The concern with the age of vegetables may be related to a lack of refrigeration along the supply chain, or the relatively new development of refrigerators at home. Consumers shop frequently and keep little food stored at home, averaging 13 shopping trips per week, in order to ensure freshness of food (Figuié and Moustier, 2009). The supermarket norm of purchasing a large amount of food in a single trip does not conform to consumer habits. Further, many shoppers assume that supermarkets use preservatives to maintain the appearance of vegetables for a longer period, thus diminishing freshness. Supermarkets and safe vegetable policy have thus far been unsuccessful in meeting consumer requirements for low prices and freshness.

3.4. Farmers unable to plan for the future

In a period of urbanisation and development, the situation for farmers is in flux. Although small-share farming of less than one hectare still makes up 70% of earned revenue in Vietnam (Sautier *et al.*, 2012), farming is losing attraction as an employment option. Between 1999 and 2009, employment in agriculture in the Red River Delta area, which comprises Hanoi, decreased by 15 percentage points (World Bank, 2011). These shifts reflect trends in the agricultural sector worldwide: the younger generation is moving into other modes of employment, incomes remain low for farmers relative to other work, yields are variable, and the generation that is actively farming is aging.

Yet other issues emerge for farmers near Hanoi specifically related to changes in the food system. Namely, farmers face the threat of losing land as part of the Master Plan, with little notice and sometimes without sufficient compensation, much less training to work in another sector. This is the case for one agricultural commune in the study, where half of the farmland is slated for conversion, but neither local government nor farmers have information about which specific plots will be developed on what time frame. One farmer in the commune explained that she had heard a public service announcement that some agricultural land nearby would be taken from farmers for other uses, but she was unsure if the process would apply to her. She had not taken measures to change her farming practices or learn new skills to prepare for work in another sector. The uncertainty of losing land and their means to livelihood puts some farmers in a precarious position.

New opportunities are also part of the story for those farmers who receive training and have institutional support under safe vegetable policy, but not all farmers have access to these tools. One farmer spoke favorably of the training he had undertaken, and his plans to participate in the new "green belt" of safe vegetable production around Hanoi. For the majority of farmers, however, conforming to the strict safe vegetable production requirements or certification to supply supermarkets is a heavy burden in terms of cost and time. Training takes weeks, certified fertilizers or pesticides are more expensive than traditional inputs, and conforming to standards can be confusing and onerous. Farmers assumed that their vegetables were "too small" or "too ugly" to be accepted by supermarket procurement chains. Thus land use policy and requirements for the safe vegetable regime or supermarket supplying put farmers at a disadvantage for benefitting from new opportunities.

3.5. Collectors and traders must adapt to a more complex chain

The traditional food supply based on relationships and a short chain is undergoing two major changes: it is lengthening and becoming more complex. The informal controls of trust between acquaintances are compromised by the fact that more actors transfer vegetables before they ultimately reach consumers in Hanoi, injecting new uncertainties at each transfer point. Whereas a few years ago individual collectors might have gone directly from the farm to the wholesale market, now it is more common for trucks belonging to delivery companies to cover long distances and aggregate vegetables from multiple suppliers. Collectors must adapt to these new parameters of a longer supply chain if they hope to survive. Land use policy contributes to pushing production farther from the city center, and as a result, the trust networks that guaranteed food safety are stretched—perhaps to the point of breaking.

Despite the current strains on the supply chain and the implications on guarantees for food quality and safety, some collectors and traders have taken advantage of the new policy environment. Distributors have capitalized on the new uncertainties within the food system to increase their own power. As for the actors with the most information along the chain—of consumer demands, market prices, and farming conditions—they act as "market makers." In this moment of transition in the food system, collectors present themselves as solutions to the uncertainties other actors face in the system: to farmers they are reliable channels to sell products, and to consumers they are still trusted sources that guarantee the quality and safety of food that they eat.

4. EVALUATING FUTURE URBAN FOOD SYSTEMS

The more modernised food system promoted by the Vietnamese government hopes to achieve a more efficient, standardized, and safe food system for Hanoi. Certainly these characteristics are important to design a sustainable and stable in the long run urban food supply. Yet an examination of the traditional supply chain suggests that other characteristics are also necessary to assess an urban food system. These characteristics should also be taken into account when local government pilots a transition in an already transforming food system.

The research in Hanoi based on actors' perceptions and evolving uncertainties calls attention to two attributes of the traditional chain that are important to the functioning of the system and are often not given due consideration: responsiveness to consumer values, and maintaining consumer trust.

Consumer values offer important signals to how the food system should be structured. Hanoi's shoppers perceive freshness and low prices to be essential characteristics of the food they purchase. In the eyes of the consumer, the traditional supply chain delivers these characteristics. By obtaining food through their local informal market, shoppers secure fresh food at a reasonable price. The traditional food chain's ability to conform to consumer demands is not shared by the modernised food system, which introduces higher prices and,

according to consumers, less reliable freshness. The traditional supply chain's responsiveness to consumers' needs is one of the system's strengths, and deserves to be acknowledged.

Another feature of the traditional supply chain is the chain's success in preserving trust from local shoppers. Most consumers have developed strategies to obtain products that meet their standards of quality and safety. Perhaps they do their shopping at early morning "frog" markets for the freshest produce, or they return to a trusted vendor every day. These controls exercised by consumers are sufficient to have faith in the food they purchase from neighborhood markets. Informal guarantee mechanisms, supported through a line of acquaintance relationships from farmer to consumer, have reinforced the trust in the system. The trust extended to the traditional supply chain does not yet carry over to the modernizing supply chain. Vegetables under the "safe" vegetable regime are seen as suspicious, and the low ratio of sales taking place in supermarkets speaks to a lack of consumer backing. Consumer trust, even through informal controls, should be valued in assessment of the supply chain.

Despite drawback in terms of efficiency and safety, the traditional supply chain has proven effective in meeting specific consumer demand and maintaining their trust. The chain's ability to deliver the types of food Hanoians expect, with attributes they value, has bolstered trust in the system. Consumer trust should not be taken lightly when envisioning governance of the food supply. Without consumer buy-in for the attributes of food, or trust in the supply system, a modernised chain will have little impact. The lukewarm reception of supermarket and safe vegetable policy further strengthens the case that food governance policy depends on a supply that is finely attuned to consumer values.

5. GOVERNING URBAN FOOD SYSTEMS: PRINCIPLES FOR THE WAY FORWARD

The Hanoi case suggests that transition in the food system, whether occurring spontaneously or as a result of policy change, generates a variety of new uncertainties for actors along the entire supply chain. Consumers face new uncertainties around food prices and quality. Farmers are unable to make investment decisions given the threat of losing farmland or a lack of capacity to conform to new safety and quality requirements. Collectors too face new uncertainties as a longer and more diverse chain diminishes their ability to guarantee the quality of their products. In the face of emerging risks for actors in the food system, government has a crucial role in reducing uncertainties.

Three principles derived from the way consumers take ownership of the food system could be useful for addressing uncertainties in the three constituencies mentioned here. Local governments could mobilize these principles as part of their policies to govern urban food systems.

- **Put consumer perceptions of food needs at the center of analysis.** Surveys or forums could provide a starting point for understanding what people value in their food, and ensuring that these values are respected in new formulations of the food system. In the case of Vietnam, more attention to freshness, price, and safety might help ease the transition and reduce consumer uncertainties. Forums with consumers would also be an opportunity to share information about modernisation projects and incorporate feedback. Consumers ultimately will drive the success of any food policy.
- **Provide farmers with the tools for planning.** Information about changes in land use is one way to help farmers plan for the future. Increasing capacity so that farmers have the ability to comply with new standards is also crucial. Training courses have been part of policy implementation in Hanoi, but could be more widely available. Further, connecting farmers with inputs, such as approved pesticides, is a challenge that will require a major investment. Equipping farmers to be active participants in the new supply chain is essential.
- **The traditional supply chain should be examined for its real and lasting strengths, and built on, not necessarily replaced.** Capitalize on transporter networks and knowledge to learn about transfer points, strengths, and weaknesses along the supply chain. The supply chain actors, therefore, could serve as key informants about the workings of the traditional supply chain. Working with transporters, and formalizing a role for them within a modernised supply chain, could ensure a more sensitive, diverse, and resilient food system.

Trust and perceptions represent important factors in local food systems, and governments would do well to incorporate these questions into their planning. Responding to the heterogeneous concerns of different actors requires time and investment, but ultimately advances the goal of a more sustainable urban food system.

6. CONCLUSION

Urbanizing centers require new approaches to meet their food needs in the coming decades. In a context like Hanoi, there are opportunities for improved outcomes for actors from farm to chopstick. Farmers could benefit from a more affluent consumer base demanding diverse products to transition to higher value production and improve their livelihoods. Vendors and transporters potentially play a role in new markets and finding new employment. Consumers could benefit from a greater diversity of products available, as well as higher standards for quality and safety.

Yet modernizing food systems do not automatically result in improved outcomes for individuals. The case of Hanoi demonstrates that an urbanizing food system gives rise to new uncertainties. Addressing and reducing these uncertainties when designing new policies and projects is the role of governance. A sensitive and varied approach, which responds to the different needs of different constituencies, is crucial to bringing to fruition the opportunities that modernisation presents in global cities.

The literature on urban food systems asks the question of how to feed the city, and what means ensure sustainability. While every food system should be assessed in its own context, the Hanoi case suggests that governance plays a crucial role in responding to the needs of various constituencies and reducing uncertainties in the transition. Beyond the metrics of efficiency, standardisation, and safety, urban food systems must foster trust and buy-in from all actors. Careful attention to the needs and uncertainties of actors is one step toward achieving that end.

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