

Routledge Studies in Food, Society and the Environment

EVALUATING SUSTAINABLE FOOD SYSTEM INNOVATIONS

A GLOBAL TOOLKIT FOR CITIES

Edited by

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7 Studying the impact of e-commerce on the sustainability of food systems in Vietnam

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7.1 Introduction

Food systems in Vietnam are rapidly transforming, in a context of urbanization, economic growth, and trade liberalization. More specifically, with rising mistrust regarding food safety (Wertheim-Heck et al., 2015), the demand for quality food products is growing. Numerous cases of bacterial and chemical contamination and intoxication are reported yearly, along with instances of high use of chemical inputs and a growing number of food safety violations (Hernandez & Lundy, 2020). Scandals surrounding the misuse of fertilizers, pesticides, and food additives often make headlines in local newspapers and spread anxiousness among consumers (Figué et al., 2019). Additionally, intensive and unsustainable agricultural practices have been blamed since the early 2000s for polluting and degrading agricultural soils, thereby affecting biodiversity, air quality, and water quality (DiGregorio et al., 2003).

Sustainable food systems as an alternative production and consumption approach have not yet gained prominence in the public debate about food in Vietnam (de Koning et al., 2015). To address consumer concerns and health problems, the public authorities have strived to modernize the food sector. They set up a National Food Control System, with the adoption of the Vietnam Food Safety Law in 2010 and the introduction of voluntary private food safety standards (Pham & Dinh, 2020). Meanwhile, consumers have adopted different practices and strategies for buying and handling food in order to navigate the uncertainties around food safety (Wertheim-Heck et al., 2014). A recent study has shown that most Hanoi citizens look for safer food products and demand better food transparency and traceability (Ferrand et al., 2018). Yet many farmers following safety standards face difficulties in finding outlets where their products can be identified as safe and sold at premium prices. Moreover, the proliferation of food safety labels and the reported lack of control by public authorities or third parties have generated a general mistrust among consumers.

Against this backdrop, many actors see e-commerce as an opportunity to connect consumers and producers for the trade of quality food products. The municipality of Hanoi recently launched a public platform to market certified

low-chemical-input food products in the city, while many urban and peri-urban consumers use social media to buy food products online. The online purchase of food products is a recent practice that has so far received little in-depth attention from scholars. Most publications on the subject focus on consumer perceptions and behaviours (Morganosky & Cude, 2000; Quevedo-Silva et al., 2016; Zhao et al., 2017) or implications for management (Murphy, 2002). However, some scholars working on agrifood systems have started to examine the opportunities and limits of leveraging e-commerce platforms, social media, and other digital technologies as instruments to improve the sustainability of food supply networks. Some researchers have assessed the ability of online food retailing to improve economic efficiency by increasing the convenience of order and delivery processes (Wang & Coe, 2021), lowering prices, and diversifying the range of goods on offer (Belton-Chevallier et al., 2014). Others have investigated the potential of e-commerce to facilitate market access for smallholders (Zeng et al., 2017), reconnect food producers and consumers in Alternative Food Networks (Bos & Owen, 2016; Holloway, 2002; Ilbery & Maye, 2006; Renting et al., 2003; Stephens & Barbier, 2021), convey information about the quality of food products (Martindale, 2020), facilitate trust-building mechanisms (Fritz, 2007), or democratize the governance of food systems (Chiffolleau et al., 2018). The impact of e-commerce on the sustainability of food systems has not yet been studied comprehensively in Vietnam. Several articles have highlighted the importance of convenience in the decision to buy online (see for instance Kim Dang et al., 2018; Pham et al., 2018). Studying food shopping practices in Hanoi, Wertheim and Spaargaren observe “a trend of buying online from farmers without direct personal contact” (2016, p. 664) but do not provide a detailed analysis of the drivers and consequences of this new practice.

To bridge this gap, the Urbal research team in Hanoi used the Urbal methodology—which involves conducting interviews and carrying out workshops and innovation mapping with stakeholders—to help characterize and assess the impact of e-commerce innovation on food system sustainability in the region. The Urbal project approaches sustainability as a multi-dimensional concept with environmental, social and cultural, economic, health and nutrition, and governance dimensions (see Chapter 1 of this book). Using the Urbal method, we aimed to answer the following questions: Can e-commerce encourage the sale of quality food products? To what extent can it contribute to the sustainability of urban food systems? And how should market relationships be organized and regulated in order to achieve such goals? The Hanoi team focused on the online sale of “quality food” and studied two different types of e-commerce channels:

- 1) an informal and horizontal channel: the use of social media (such as Facebook or the more local application Zalo) to buy and sell food products
- 2) an institutional channel: a municipality-driven platform called Cho Nha Minh, intended for the sale of certified products

In the first section of this chapter, we introduce the e-commerce context in Vietnam and the two innovations we investigated following the Urbal approach. In the second section, we present the results of the discussions on the potential impacts that these innovations may have on different dimensions of sustainability. In the last section, we discuss these results and point out the limits of the Urbal process and the adaptations required in the local context.

7.2 Presentation of the two cases and the use of the Urbal approach

7.2.1 *Urban food systems in Hanoi and the development of e-commerce*

The urbanization rate in Vietnam has been increasing by nearly 1% yearly, from 30% in 2010 to 37% in 2020 (O'Neill, 2022). In Hanoi, the capital city (with an urban population of 3.6 million), drastic changes have affected food sourcing and consumption practices. Most of the food consumed in Hanoi was long sourced from the fertile urban hinterland. Since the early 1990s, demographic growth, urban sprawl, competition over land use, trade liberalization, private sector investment, and public policies for retail modernization have resulted in longer food supply chains, growing volumes of imports, the development of food processing industries, and greater economic concentration in the food sector (Raneri et al., 2019). New urban ways of life and higher revenues have fostered a nutrition transition, with diets shifting towards more fish, meat, dairy products, fruit, fats, and processed products while consumers are increasingly demanding higher-quality products (Harris et al., 2020). Recent years have been characterized by the development of supermarket chains and convenience stores, which sell processed food but sometimes also fresh products (vegetables, fruit, and livestock products) certified as “safe” by State agencies. However, there is resistance to food system modernization in the “traditional” food sector, which is characterized by informal wet and open markets. As of 2018, between 85% and 90% of fresh farm products were still sold in wet markets and open markets and by street vendors (Loc & Moustier, 2016; The University of Adelaide, 2018).

At the same time, online sales are booming across all industries. The general e-commerce sector has been expanding rapidly in Vietnam, reaching a value of USD 9.5 billion in 2019, representing 5% of the total retail market (Thanh, 2020). The physical distancing policies imposed by local authorities in 2020 to combat the COVID-19 pandemic reportedly boosted this growth. By 2018, 98% of people using the Internet had made purchases online (Saigoneer, 2018). Revenue from online “B2C” (business-to-consumer) sales in Vietnam ranked sixth worldwide (Deloitte, 2019). In 2019, the main actors on the market were Shopee.vn, VinID.net (the e-commerce site of VinGroup), Sendo.vn, Lazada.vn, Tiki.vn, and Lotte.vn. Among other products, food products are often sold online, and following the restrictions introduced during the COVID-19 pandemic, farmers turned to e-commerce platforms to sell their produce (VNS, 2021). While very few fresh food products are found on the aforementioned

B2C online platforms, “C2C” (consumer-to-consumer) e-commerce for food products is becoming increasingly popular in Vietnam. A survey carried out in 2016 showed that in Hanoi and Ho Chi Minh City, 47% of people buy products on social media (VietnamNet, 2017). In Vietnam, an estimated 43.5 million people use Facebook on a regular basis (Degenhard, 2023). The most popular application for online sales is Zalo, an instant messaging and calling application that can be used both on smartphones and on computers.

7.2.2 The methodology used to apply the Urban approach

The two case studies were explored separately. For the first case study, in 2019 the research team carried out semi-directed interviews with 13 buyers and 6 sellers operating on social media. A participatory workshop was organized in December 2019 to discuss potential impact pathways of these activities, bringing together 24 stakeholders (vegetable, fruit, and meat sellers, fish and honey sellers, researchers, journalists, and governmental officials). The discussions focused on three main sets of activities, identified as important through interviews and a review of the literature, and on these activities’ experienced or possible effects:

- 1) market transactions (online orders, online payments, delivery)
- 2) trust building and information sharing (sharing opinions, evaluations and comments, posting information and interacting with customers, managing reputation and loyalty)
- 3) connecting producers and consumers (identifying sellers of specific products, reaching out to consumers)

A second workshop was held in November 2020 to discuss the results. Ten participants attended, including producers, intermediaries, consumers, and public authorities, some of whom had already attended the first workshop. Additional interviews were carried out in early 2021 with 8 buyers and 7 sellers to further explore the question of trust in the context of online retail. In total, individual interviews were carried out with 21 buyers and 13 sellers. Among these 13 sellers, five were professional operators with three who ran brick-and-mortar food shops and two who ran agricultural cooperatives. The others engaged in online retail as a complementary activity.

The second case study, focused on the Cho Nha Minh (CNM) platform, was carried out *in itinere*, over the course of the project’s design phase, pilot phase, and initial implementation phase. In 2019 and 2020 the research team conducted three semi-directive interviews with the municipal authorities (the Department of Agriculture and Rural Development (DARD) and the Hanoi Certification Centre), one with the Hanoi Women’s Development Support Centre (an organization partnered with the project), and eight with companies and agricultural cooperatives identified by DARD as supplying products on the platform. It also carried out observations and informal interviews at an

“offline” physical CNM stall temporarily set up in Hanoi. The team maintained informal relations with DARD in order to follow up on the implementation of CNM. It also collected and translated documents (particularly the rules and regulations of the CNM platform) and newspaper articles about CNM, and ran a participatory workshop in December 2020 with 18 participants, including producer groups’ representatives, food retailers, consumers, the head of the Hanoi Certification Centre, the country’s representative at the FAO, and researchers specialized in technologies for agriculture, environmental studies, and agricultural economics. The discussions were structured around two main themes and associated activities:

- 1) setting up a public platform for market transactions (creating a website for online transactions, opening a shop, providing public governance)
- 2) enrolling participants (attracting new clients and registering local suppliers who comply with the platform’s standards)

A workshop was held in September 2021 with 21 participants to discuss the results of the first workshop.

Unfortunately, the research activities were impacted by the COVID-19 pandemic and the subsequent sanitary measures taken by the government. Face-to-face interviews and physical workshops were not possible during most of 2020. The implementation and grand opening of the CNM platform have also been postponed many times due to public health restrictions.

7.2.3 Case study 1: *The use of social media to buy and sell quality food products*

The first case study of the Urbal project in Hanoi focused on the use of social media for the sale and purchase of quality food products (see Figure 7.1). This practice can be described as a “social innovation”, a term which Marques et al. (2018) use to refer to the “activities which aim to change in a significant manner the way that certain goods or services are produced and delivered” (p. 502). When using social media, users mobilize an external and pre-existing technological innovation—the applications and the supporting technological devices—to develop new ways of interacting and trading goods. In this innovation, no group of innovators reflexively coordinates in order to contribute to specific pre-determined goals. The innovation relies on the new economic relations established by isolated actors, rather than on the technical device that supports these relations. It arises from decentralized and polycentric practices that ultimately build up networks of users in a rhizomatic way.

The sellers (producers and intermediaries) and buyers using social media whom we interviewed claimed that they were engaging in a “new practice”, but did not consider themselves as innovators. Moreover, concerns relating to sustainability, as defined by the Urbal project, were rarely central to their selling or buying practices. The main driver for using these applications was

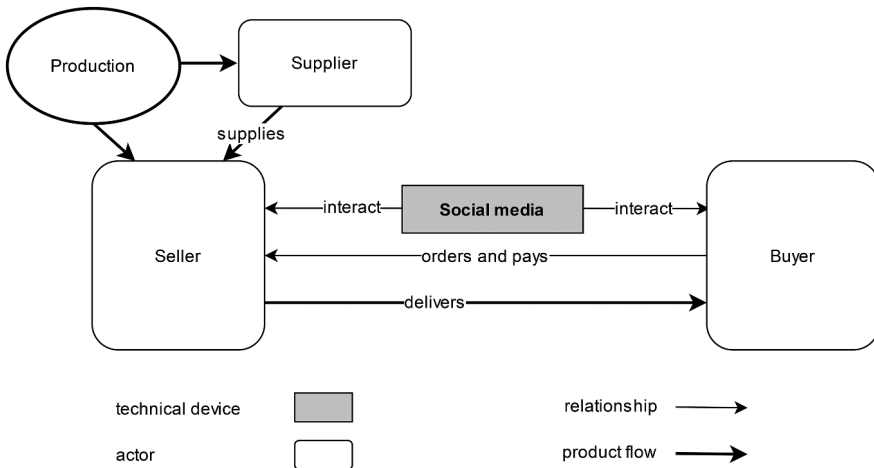


Figure 7.1 Network map of the actors and actions involved in the use of social media to buy and sell quality food products (Case Study 1).

unanimously the convenience of the economic relationship they enabled. Nevertheless, many fresh food products sold online meet different sustainability criteria, such as food safety, organic or “clean” production, palatability (good taste), and connection with origin or cultural identity. The research team focused its attention on the use of social media to trade these types of quality food products. Sellers and buyers usually connect through relatively “weak” linkages, be they physical or digital. However, this is not to say that coordination is absent. As we explain below, communication among buyers is key to creating trust; likewise, sellers sometimes share information about their practices and often use a common Facebook group to sell their products, providing a space for discussion and exchange.

7.2.4 Case study 2: A municipality-driven e-commerce platform (Cho Nha Minh)

The second case study relates to the online public-private platform CNM. According to the Hanoi People’s Committee (PC) and the Department of Agriculture and Rural Development (DARD), urban consumers have difficulties identifying and sourcing safe food products on the market (interview with DARD, 2019). With e-commerce rapidly developing in Hanoi, they felt that an online platform could be an appropriate tool to connect producers of safe food and urban consumers. In 2018, the public authorities approved the decision to launch the Cho Nha Minh (“our own market”) programme, which consisted of creating a transaction centre for producers and intermediaries who abide by food safety standards. Cho Nha Minh (CNM) was initially intended as an online platform managed by the municipal authorities, to be

complemented with physical stalls offering the same range of products and promoting the online platform. Public management is seen as necessary to reassure consumers. The authorities argue that buyers trust the products certified and controlled by public authorities more than the ones sold on private platforms which “don’t have any public accountability” (interview with DARD representative conducted in 2019). The digital platform was designed in 2018, with a pilot version launched in 2019. It was supervised by the Hanoi Agricultural Products Quality and Certification Centre (hereafter Hanoi Certification Centre), a department of DARD (see Figure 7.2).

In this case study, the innovation is centralized, planned and programmatic, with specific strategies and goals identified by the innovator. However, the innovation was taking its very first steps when the Urbal team started studying it. Moreover, the municipal authorities were initially not fully convinced of the added value of the proposed participatory mapping, as we explain in the last section of this chapter.

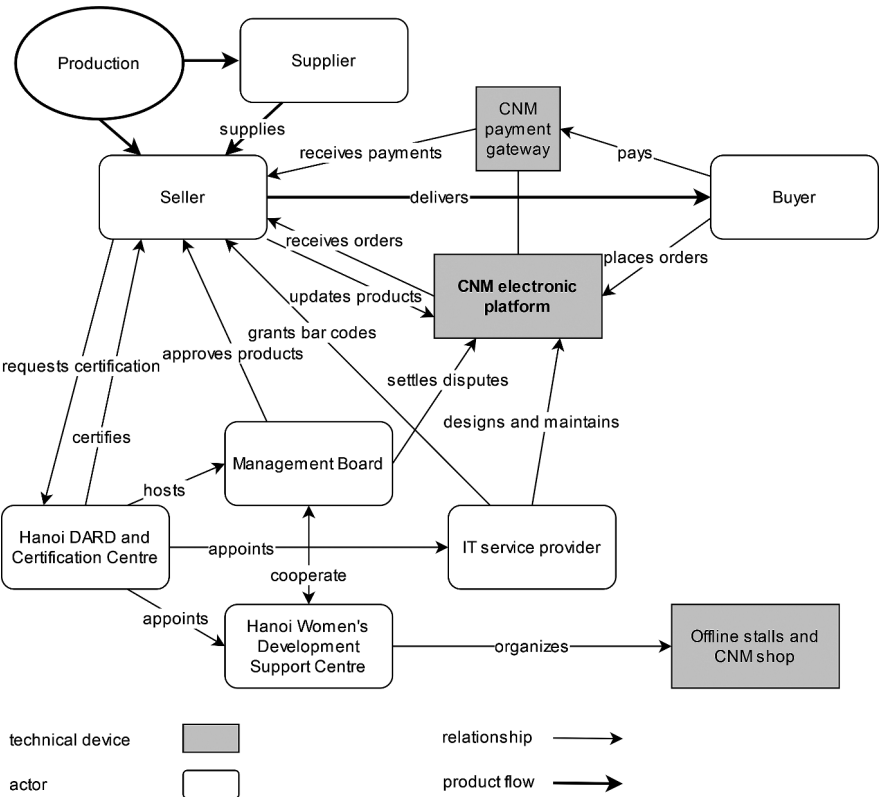


Figure 7.2 Network map of the key actors and actions involved in the municipality-driven platform CNM (Case Study 2).

7.3 Results: Food e-commerce innovations may foster efficiency but raise concerns regarding trust

7.3.1 *Defining and characterizing the activities*

7.3.1.1 *Use of social media*

As the team studied the use of social media to purchase food, it found that most of the time, consumers use digital applications and websites to buy fresh food (fruit, vegetables, meat, fish, etc.) or minimally processed food products (cakes, spices, etc.) of presumably higher quality. In this social media context, most of the online sellers are intermediaries, and not primary producers. Sellers tend to point to producers' lack of time and ability to market their production themselves. Usually, sellers publish a post on their Facebook page once they have acquired products, or when they are selling specific foodstuffs. Many sellers post pictures of the products, add at least basic information about them, and specify the price, the minimum order quantity, etc. Buyers can send the seller a private message, reply with a comment, or call or send them a message on Zalo or Messenger to order, specifying the quantity needed. The seller then confirms the order and direct contact is established by phone or via mobile applications to specify the delivery conditions. Facebook and Zalo are the two main channels used. When there is a personal connection between sellers and buyers, payment is made upon delivery. Otherwise, some sellers ask for advance payment, while others get paid through bank transfer. Delivery can be carried out by the seller or by a dedicated delivery service company.

When selecting the participants to invite to the workshop, the team sought to include sellers spanning a diverse range of scales of activity and products sold, and buyers with varied profiles in terms of gender, age, and education. Most of the buyers interviewed had only started using online apps to source food one to three years ago, while the intermediaries had been in the digital business for up to five years. Most of the producers interviewed had just started selling online. Despite our desire to avoid a gender bias, the majority of the online food buyers interviewed were women, as food shopping is still a gendered activity in Vietnam (Kim Dang et al., 2018). Most of them were in their thirties or forties, either married or not, with or without children, and had a professional activity, a decent salary, and a university education. Many had started buying online when they were university students. Some recalled starting this practice unexpectedly as they browsed Facebook, while others were influenced by friends or relatives.

Despite the considerable cost of entry, a growing number of producers, mainly agricultural cooperatives, now sell online in Vietnam. The sellers interviewed fell within two categories: professional organizations, such as agricultural cooperatives and food retailers looking to diversify their retail channels, and non-professional actors acting as intermediaries and selling online as a secondary activity to bring in additional revenue. Most of these non-professional sellers already had direct contact with producers before they started practising

e-commerce. Some of them, presently living in Hanoi, came from rural or coastal provinces where their parents or other relatives could buy directly from farmers or fishermen and ship the fresh products to Hanoi. Other sellers had professional experience in the field of rural extension services and agricultural economy. The team met staff members from provincial Departments of Agriculture and Rural Development who sold food online, benefiting from their contacts in production areas upstream and from their colleagues' interest in fresh and quality food downstream. The same was true for many of the agricultural economics lecturers at the VNUA (Vietnam National University of Agriculture) in Hanoi. Interestingly, some "local e-marketplaces" have emerged in these institutions: many staff working in these agricultural research and extension institutions buy online from their colleagues, who source directly from producers with whom they work. These e-marketplaces usually take the form of Facebook groups where sellers post their offer and buyers place their order. In this case, the innovation is a (loosely) coordinated process aiming to achieve certain predetermined goals.

7.3.1.2 *The municipality-driven platform "Cho Nha Minh"*

Literally, *cho nha minh* means "our own market", an inclusive term that DARD chose to boost buyers' and sellers' sense of responsibility and participation. CNM is supposed to target all kinds of consumers, from lower-middle-class to upper-class backgrounds, and to cater primarily to Hanoi consumers. If successful, it is expected to later be scaled out at the national level. On the supply side, CNM is designed to be centred primarily on producers and retailers from the Hanoi municipality and nearby provinces delivering fresh produce (vegetables, fruit, meat, fish, and seafood). It may also include producers further afield that supply regional specialty products (rice, noodles, tea, oil, fish sauce, spices, honey, etc.). As of December 2020, about 140 suppliers, most of them producers, had registered with the programme, only 44 of whom had been approved by the authorities.

As per the rules and regulations of CNM, the Hanoi Certification Centre is in charge of managing the programme's activities, namely operating the website, vetting and approving the sellers and buyers and ensuring the effective implementation of the rights and obligations of each party. To sell their products on CNM, suppliers must have or apply for food safety certifications such as VietGAP (agricultural best practices certification), VietGAHP (animal husbandry best practices certification), and organic farming certification, all of which also involve enhanced environmental value, or HACCP (Hazard Analysis Critical Control Point) and ISO 22000. Inspections are carried out by the Hanoi Certification Centre. The sellers are required to label the products sold on CNM with the "CNM" registration logo. An IT service provider contracted to support the platform is responsible for designing and maintaining the website, resolving incidents, implementing privacy policies, and opening online

accounts for each member. Sellers must post information about the products for sale and their sales policy (shipping policy, exchange policy, etc.) on the CNM webpage. The products must be approved before being displayed online. Transactions can be carried out through CNM's electronic trading portal. After logging in, buyers add products to their shopping cart and select the appropriate shipping and payment method (payment upon delivery, payment via debit card, payment via bank transfer, etc.). The seller must then process the order. Transactions can also happen outside of the digital platform: buyers can use the website to simply search for information about the products and then place their order directly (for instance by phone or email). CNM does however encourage purchasing and selling through the electronic platform, as products are controlled and certified, and users are supported in case of conflicts and complaints.

In the last months of 2018, the municipality launched “offline” CNM stalls in order to raise awareness about safe food and to promote the online platform, which had not yet been developed at the time. The offline stalls consisted of mobile stalls covered by large umbrellas, set up in locations deemed as “strategic” (in front of malls, in upper-end neighbourhoods, etc.) on Saturdays and Sundays. They sold safe food supplied by aspiring sellers on CNM and shared information about CNM.

The CNM programme was reportedly first delayed due to long administrative procedures. The grand opening has been planned and postponed several times. The programme also encountered several unexpected hurdles. The IT company that had been appointed to develop the digital platform was charged over a massive fraud operation in April 2019 (Ba, 2019). In January 2020, the outbreak of the Covid-19 pandemic further delayed the implementation of the programme, as the authorities suspended the offline stall campaign. Ironically, online sales in Vietnam skyrocketed when physical distancing was enforced in late March 2020. According to the interviews conducted with suppliers, the CNM platform has never been fully operational. For a whole year after its launch, the website constantly had to be taken offline. In Spring 2020, hundreds of products were posted on the platform. Yet due to technical issues, it was impossible to place orders online: buyers had to contact the sellers directly (over the phone, through social media applications, etc.) in order to buy products. Most of the products displayed on the website were out of stock and the related information had not been updated in many months. Furthermore, the suppliers were never able to post information directly on the website: they had to email the information to the Hanoi Certification Centre, which would then post it online. This created additional work for the public authorities.

In mid-July 2020, DARD opened a CNM brick-and-mortar shop in Ha Dong district in collaboration with the Hanoi Women's Development Support Centre, where suppliers registered with the CNM programme can sell their safe food products. Women who are potential buyers or potential suppliers are encouraged to take part in this programme.

7.3.2 *Impacts on sustainability: E-commerce as a convenient way to purchase quality food*

The impacts of these innovations on the various dimensions of sustainability were discussed with their different stakeholders during preliminary individual interviews as well as the participatory workshops.

Few stakeholders involved in the two case studies mentioned a specific dimension of sustainability, let alone sustainability in general, as a factor informing their practices. Regarding the CNM platform more specifically, the municipal authorities' vision is clear: their focus is on food safety and securing trust and profitability in the value chain. While it is not explicitly articulated in these terms, the CNM platform therefore contributes to sustainability in the region by providing consumers with access to safe and trustworthy food sources. For their part, the CNM users (sellers and buyers) see the platform not as an opportunity to contribute to a specific dimension of sustainability but as one of a number of devices to access the market and to connect with one another.

7.3.2.1 Economic impacts and convenience

Our research confirms the findings of earlier works on online purchases in Vietnam (Kim Dang et al., 2018; Pham et al., 2018): convenience and saving time were the most frequently mentioned reasons for stakeholders engaging in online retailing and shopping. Buying online was usually depicted as “highly convenient” and many buyers with busy schedules argued that they did not have time to go to the “physical” market every day. Some also considered online buying as a trend of which they wanted to be a part. There is clearly an entertainment aspect to online shopping; some consumers saw this activity as “exciting” and “fun”. One consumer depicted the videos posted online as being “like cartoons”. Special offers and promotions also seemed to bring interest and excitement to many buyers. The benefits were often presented in economic terms: consumers looked for lower prices, due to the presumably higher and fairer competition online. The buyers also mentioned the diversity of available offerings as an attractive feature of e-commerce, with more possibility to compare products and prices. Some buyers and regulators saw the high degree of competition between actors selling online and the possibility for buyers to ask them questions directly as an incentive for suppliers to deliver better products and services.

As for the sellers (producers and intermediaries), they also considered online trading as an efficient way to access the market. They praised e-commerce for enabling direct communication and facilitating access to buyers who lack the time and ability to come to their shops. They hoped to secure higher revenues through more efficient processes and lower transportation and intermediary costs.

7.3.2.2 Quality food and health

At face value, e-commerce fulfils the neoclassical function assigned to markets: maximizing utility and satisfaction for all agents. Yet the main stakeholders often also saw it as a preferred way to sell and buy “quality” products. When asked how they defined “quality products”, the consumers usually pointed to “tasty”, “safe”, and “clean” products or, in other words, products free of harmful residues. For instance, freshness of seafood (fish, squid, shellfish, etc.) was equated with safety. People selling sea fish and seafood on social media usually have direct connections with fishermen: fresh fish is bought straight from the boat and shipped to Hanoi, covered in ice cubes in Styrofoam boxes. When it reaches the consumers, it is usually fresher than the sea fish sold through traditional food supply channels, where fish moves from hand to hand, brought from the Hai Phong or Ha Tinh harbour to local wholesale markets where it is kept and handled in conditions that are perceived as “unsafe” and “unhygienic”.

While the online buyers acknowledged that there were other ways to buy safe food products, almost all of them expected products bought online to be safe. In other words, although the quest for food safety was not the primary driver of online purchases, safety was usually integrated in the more general concept of quality. As we shall see later, many of the buyers considered that the direct relationship achieved through online purchases enables trust in food quality. The opportunity to ask questions and to get tailored (and sometimes visual) answers and information also reportedly enhances the quality of the food sold online.

The buyers often used online applications and platforms to access food specialty products that are not easily accessible in physical shops and traditional markets. Products such as wild spices (*mac khen*), regional specialty products (*banh da* from Nghe An), renowned products (eel from Nghe An province, seafood from Phu Quoc and Nan Dinh), and fruit associated with specific production places (Dien pomelo, Vinh orange, etc.) are often bought and sold online. While these products can be associated with a “foodie” culture that reproduces social inequalities through distinction (Johnston & Baumann, 2014), they can also convey a specific attachment to culinary diversity, identity and craftsmanship. As for the food sellers, be they producers or retailers, they saw e-commerce and the direct connection with buyers it implies as a way to emphasize the specific qualities of their food products.

As de Koning et al. (2015) argue, “health in combination with food is the most important reason for people to pursue a sustainable lifestyle” (p. 608) in Vietnam. While the quest for quality can be understood as a utilitarian way to enjoy a product with better organoleptic and biochemical properties and a lower (or no) negative impact on health, this concern incidentally contributes to the development of shorter food supply chains, reducing the number of intermediaries, and better connecting producers and consumers. Sustainability is not an intrinsic quality of these food products and food supply chains, but

rather an incidental, fortuitous quality that emerges as a by-product. Nevertheless, it is worth taking into consideration. This therefore raises the question of whether sustainability should always be a deliberate, reflexive driver for change, or whether it could be achieved by other, more individualistic, utilitarian, or instrumental means through specific market arrangements.

7.3.2.3 *Environment and local development*

Some of the consumers had a more “holistic” conception of what constitutes a “good” food product. A retired schoolteacher mentioned that she ordered organic pork online as she was concerned about the farming practices as well as the animal slaughter conditions. Another buyer expressed an interest in “safe vegetables” from Moc Chau and Dalat (cities in mountainous regions), as she felt that the growing environment was cleaner in those regions and the growers’ working conditions were better. With the CNM platform, the production and sale of safe food can be more closely associated with environmentally sound practices. Although DARD did not mention this point when the research team interviewed them, some of the producers did allude to it. Not only do lower levels of fertilizer and pesticide use result in safer food for consumers, but they also reduce soil, water, and air contamination, thereby contributing to a healthier environment for the local residents and preserving biodiversity.

Few consumers or buyers spontaneously pointed to the reduction of road traffic facilitated by a more efficient transportation system and consumers making fewer trips to the markets as a positive impact of online sales. However, when specifically asked about it, many of them agreed that this was a potential positive impact.

As fresh food products (such as vegetables or meat) perish quickly, they can be only delivered within a small radius. Food product e-commerce therefore does not induce a placeless food network, as some have argued. On the contrary, it tends to foster the development of short food supply chains and locally sourced food production. This is especially the case when producers sell online without intermediaries. Moreover, as a researcher invited to one of the workshops suggested, e-commerce can indirectly support agroecological practices: by facilitating access to a wider range of fresh products, it encourages diversity in local production.

If it is able to overcome the technical and administrative difficulties mentioned above, the CNM programme could improve territorial cohesiveness and sustainable regional development. During the platform’s first few months in operation, the municipality mainly enrolled producers based in Hanoi or in nearby provinces. By facilitating a direct or close connection with consumers, the platform has the potential to provide easy and direct access to the urban market for many local producers who cannot afford a brick-and-mortar shop in the city. In this innovation, the public authorities are not an intermediary *per se*, but rather provide a sociotechnical arrangement to facilitate market connections. The platform may foster the production of safe food and help retain

economic value within the urban periphery. If scaled out, it could potentially bring about a more diversified economy and landscape, a dynamic green belt around the city, a cleaner environment, better profits for producers, and job creation in the agricultural sector.

7.3.2.4 Governance, trust, and accountability

The interactions between consumers and sellers are often depicted as more satisfying online than in physical shops. Many consumers praise these “new variants of ‘face-to-face’ contact” (Renting et al., 2003, p. 400) through e-commerce. Online trading can virtually cancel out physical distance and foster a “relation of regard” (Sage, 2003) between producers and customers. Online market relationships are sometimes contrasted with the trade relationships at traditional wet markets and supermarkets: with e-commerce, consumers can easily give their feedback (which is not the case at supermarkets), and this feedback is taken into account by sellers (which rarely happens at traditional markets). The governance of the food supply chain can therefore be considered as more participative or “democratic” (although the term was not used by our respondents). E-commerce can potentially reinforce the role of stakeholders at both ends of the food network. Through their direct interactions with producers, consumers play an active role in determining the kinds of products sold and, one can speculate, the ways these foodstuffs are produced. E-commerce, especially when it favours direct relations between producers and buyers, reinforces consumers’ control over the food chain. At the same time, it can also facilitate access to the market for producers, who thus regain autonomy over the retailing of their products.

Regarding the CNM programme, some interviewees and workshop participants argued that the public governance of the platform could support the government’s role in promoting collective action and ensuring the public good. Additionally, the collaboration initiated by DARD with the Hanoi Women’s Development Support Centre and the easy access granted to women-run businesses could promote gender equality and the empowerment of women.

While e-commerce is a preferred channel for the sale and purchase of quality products, one of the main challenges with online shopping is ensuring and enhancing trust in the food system. Fritz (2007) argues that “communication of trust between transaction partners is not sufficiently realized in existing e-commerce offers for food networks” (p. 13). This was confirmed by the interviews and workshops held in both case studies. Most of the buyers and sellers thought that, generally speaking, food sold online was less trustworthy than food sold in physical shops. This lack of trust is linked to two main characteristics of e-commerce. The first material characteristic is the distance in time and space between ordering, shipping, and receiving the goods, which may result in poor appreciation of the products (mismatch between expectations and reality) and a deterioration of quality during delivery. Many buyers considered that the inability to physically check a product (by touching it, smelling it, etc.) before buying it is a

major drawback of online sales. The second characteristic is more specific to the Vietnamese context. Many stakeholders argued that, contrary to physical retail, online retail is not controlled by the government and therefore opens up a significant avenue for fraud and the sale of low-quality goods. The ease of entry onto the market that online sales permit could thus reinforce this unfair competition and the risk of fraud.

Buyers do however usually trust their sellers. Paradoxically, whereas the products sold online are generally considered as less trustworthy than products sold at physical markets, the specific sellers selected by each buyer are individually considered as more trustworthy than regular sellers. The consumers interviewed expressed both a general mistrust of online sales and an individual attachment to the online sellers they had chosen, making the establishment of trust a personal matter. This is enabled by different choice, calculation, and valuation strategies. For instance, the online sale of honey, a product that exemplifies the risk of fraud through tampering with sugar, proves that trust levels in e-commerce can be very high.

The CNM programme chose to focus on certification: the standards enforced and the municipal control over them are supposed to prevent exposure to chemical and bacterial contamination. Yet personal relationships appear to be one of the most important trust mechanisms, especially when using social media. What is noteworthy in this case is that trust is not built through the practice of buying online but precedes it. Online sales do not generate trust. On the contrary, trust makes online sales possible. Most buyers have prior direct or indirect relationships with the sellers—they met the sellers at food trade fairs, they visited their physical shops, they maintain family, friendship, or professional ties with them, they were introduced through mutual friends, etc. In wet markets, trust is usually embedded in relations of geographic proximity and temporal constancy: the seller down the street is trusted because he/she belongs to the community or has proven to be reliable over time. Digital retail more or less builds on the same patterns of trust. While the economic transaction takes place in a virtual sphere, the market relationship still depends on proximity, constancy, and embeddedness.

Wertheim-Heck and Spaargaren (2016) argue that in Hanoi “social relationships moved from face-to-face contact to online communities” (p. 662). Yet our research reveals that online communities often extend the time- and spatial scales of a pre-existing face-to-face relationship. Still, online trading does reconfigure this relationship. Since consumers see a benefit in sellers having the opportunity to post information, pictures, or even videos online, online purchasing can thus contribute to reducing the physical and economic distance between producers and consumers and to fostering urban-rural linkages, as has already been highlighted in the literature on alternative food networks (Blay-Palmer et al., 2018). Direct contact between suppliers and buyers, as well as the sharing of information online (pictures, description of farming practices, etc.), could also enhance consumers’ knowledge of the food they eat and foster trust in the food system.

The products sold online often differ from products bought through mainstream retail channels. Likewise, the food supply system for e-commerce also differs from physical retail. The online food retail innovations considered in the case studies of interest here contribute to the creation of alternative food systems, both through the types of products sold (high-quality and sustainable food items) and through the networks established (direct relationships grounded in personal trust) (see Watts et al., 2005). Our research confirms that, under certain conditions, the online trading of quality food fosters the “socio-material reconnection processes” (Bos & Owen, 2016, p. 1) that occur in alternative food networks (Ilbery & Maye, 2006; Stephens & Barbier, 2021).

7.3.2.5 Potential negative impacts

Beyond trust not being a given in online food retail, the sellers and buyers involved in the case studies did point out other shortcomings. Some stakeholders argued that online retail introduces a kind of unfair competition for the marginalized traders who do not have the means to access and use digital technology. Moreover, some stakeholders saw the ability to order from home and to receive deliveries as driving an increasingly sedentary lifestyle, potentially harming health. Finally, although no participant mentioned this point, we can also argue that online purchases may have negative environmental outcomes: it may increase road traffic in case of lower pooling of food transport flows and induce more electronic waste and energy consumption associated with the use of electronic devices (Figures 7.3–7.5).

7.4 Discussion: The need to adapt to local contexts and understandings

7.4.1 Barriers and enablers

During the workshops, the participants identified several barriers to e-commerce having a positive impact on the different dimensions of sustainability. Many argued that food—and especially quality food—is not the most convenient product for online trade, as sensory appreciation is often necessary before making a purchase. While social media can “explain the material qualities of food” (Martindale, 2020), they cannot physically convey them. The lack of trust in the products sold online was also unanimously mentioned as an obstacle. This was often associated with the difficulty for public authorities to control online sales, mainly owing to a lack of resources. The CNM platform was conceived as a way to counter this alleged lack of trust in the transactions that take place on social media. However, as mentioned earlier, the difficulties it has encountered highlight the shortage of financial and human resources with which the public authorities must contend. Many stakeholders also considered that smallholders and small suppliers lack the knowledge, time, and financial

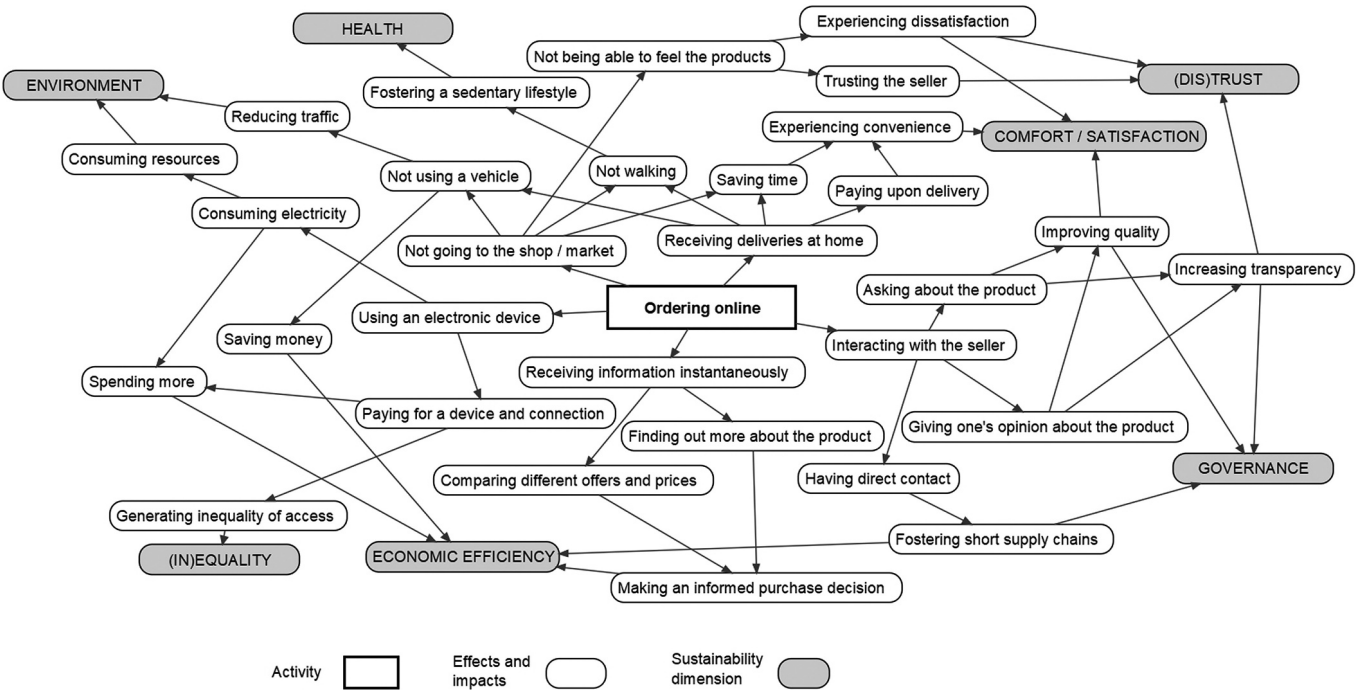


Figure 7.3 Potential positive and negative impacts of ordering on social media (Case Study 1), mapped before the workshop.

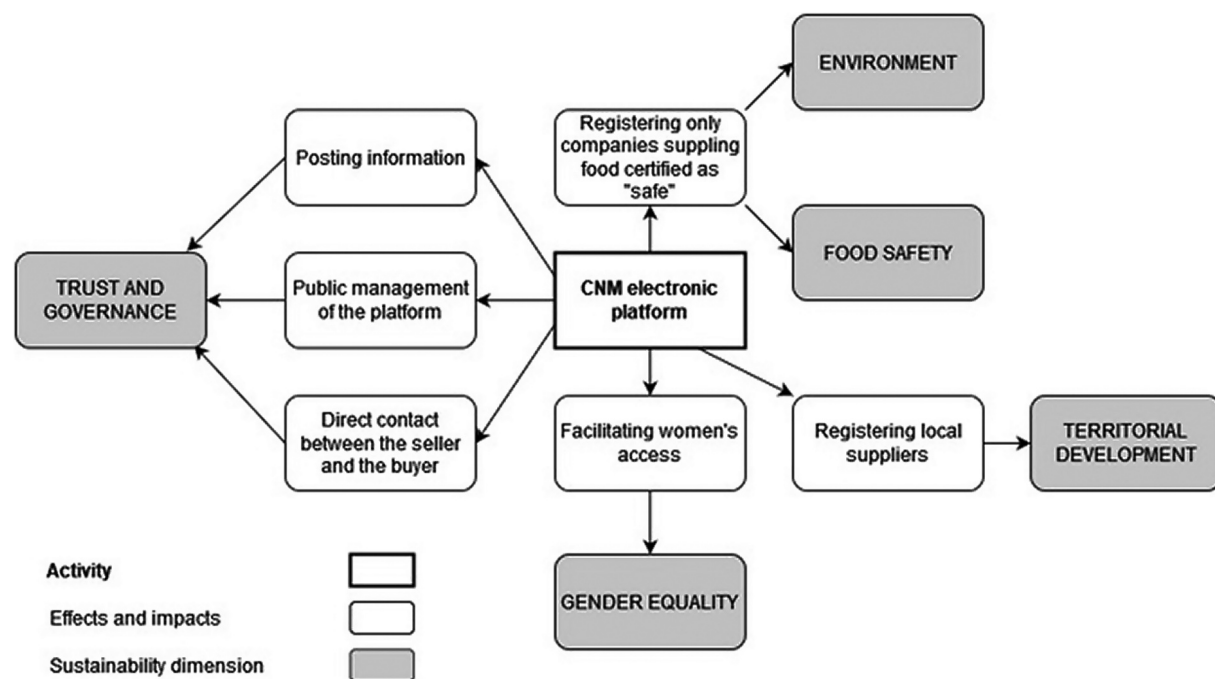


Figure 7.4 Potential positive impacts of the municipality-driven platform (Case Study 2), mapped before the workshop.

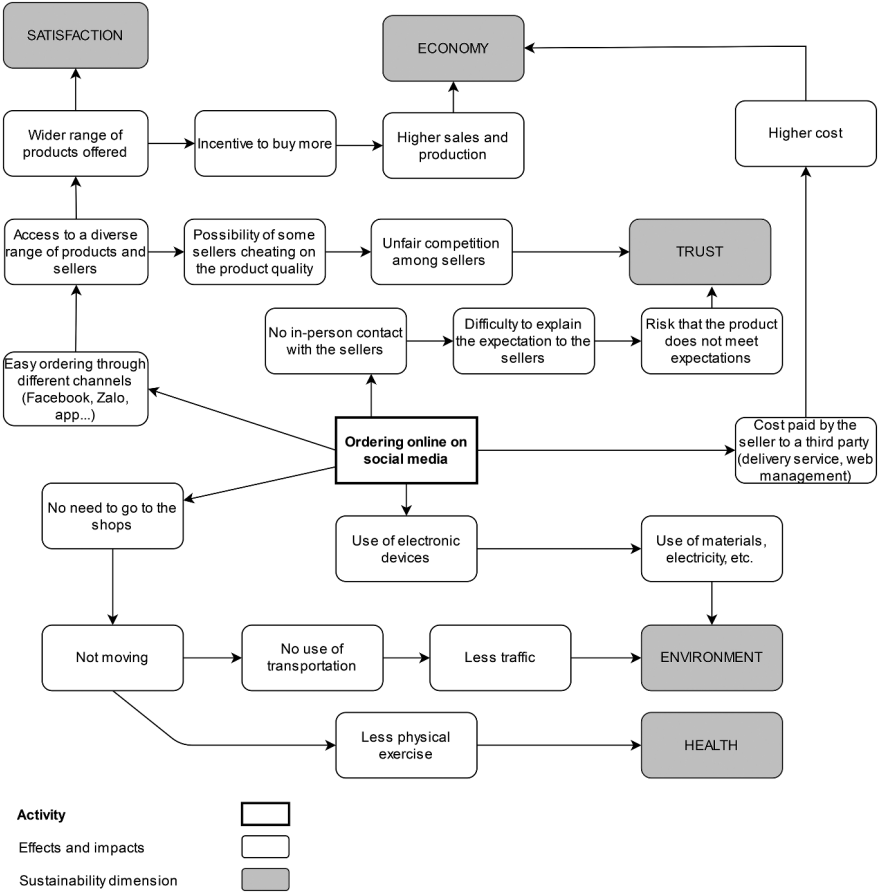


Figure 7.5 Positive and negative impacts of ordering online on social media (Case Study 1), mapped during the participatory workshop.

resources to engage in e-commerce. Many pointed to the digital divide between those who master the technology and those do not or cannot access it.

Some suppliers expressed their dissatisfaction with online trading. They argued that it raises logistical and organizational difficulties, including a reliance on delivery companies to ship small quantities due to the high costs associated with handling deliveries and that updating the information online is time-consuming. They also identified securing buyers' loyalty as a challenge since the vast majority of consumers prefer going to the traditional market. Adapting to buyers' requirements for flexibility in terms of delivery times or payment methods was likewise a big concern.

Accordingly, many stakeholders called for more public interventions not only to introduce control measures or taxes but also to involve the private sector in setting up appropriate technological solutions. Capacity-building

programmes were suggested to enable small actors to engage in e-commerce. Many participants also stressed the fact that e-commerce is not a purely virtual relationship—it requires efficient and reliable infrastructure to ensure the proper shipping of the goods ordered.

7.4.2 *The question of trust and the participants' instrumental understanding of sustainability*

Although the workshops focused on sustainability in general, the research team noticed that there was no shared understanding of sustainability among the participants. The concept was explained at the beginning of the workshops, but the stakeholders did not use it when expressing their views on the innovations discussed. The facilitators had to break down sustainability into its different dimensions (health, social, economic, ecological, etc.) as defined by Urbal, in order to stimulate discussions about non-economic dimensions. Despite regular reminders, environmental and equity issues were rarely addressed, and the stakeholders mainly focused on “instrumental” or economic-driven dimensions such as convenience, customer satisfaction and market opportunities for producers. Interestingly, the concept of “sustainability” itself is hardly translatable into Vietnamese. “Sustainable” is translated as *bền vững*, which denotes something that “lasts a long time”, without any ecological connotation *per se*. Most of the participants therefore merely expressed their views on how these innovations could “last a long time”. It is clear that the “holistic” and “multi-dimensional nature of the concept of sustainability” (Béné et al., 2019, p. 127) is not taken as a given in non-Western and non-academic contexts. Thus, discussions about the necessary trade-offs between specific dimensions of sustainability did not emerge in an explicit way.

As mentioned above, many stakeholders referred to trust as a major issue for the e-commerce of quality food, either blaming online retail for failing to generate trust or calling for mechanisms to guarantee trust. In the discussions, the participants explored the potential of different activities involved in e-commerce (posting information online, public control over online sales, etc.) to ensure more trust in the quality of the products sold. Through the interviews and the workshops, we identified four main mechanisms to build and sustain trust in online sales:

Institutional trust:

- 1) **Expertise:** trust is enabled through controls and the granting of certifications, labels and brands by third-party corporations or State bodies.
- 2) **Reputation:** trust is enabled by the recognition and praise of the seller's features by a larger community.

Interpersonal trust:

- 3) **Relationship:** trust is ensured by the buyer knowing the seller prior to the market transaction or, in an intermediated and less direct way, by someone whom the buyer trusts expressing their confidence in a seller they know.

- 4) **Experience:** trust is sustained by the buyer having already bought from the seller and being satisfied with the quality of the products.

In the discussions, trust was seen as both a necessary condition of food systems' sustainability and an outcome of specific market relations. In the tentative Urbal approach, trust was not identified as a specific dimension of sustainable food systems. Yet the literature on alternative food networks often presents trust as a product of local and "embedded" food systems (see for instance Sage, 2003). According to this body of work, the face-to-face relationship between sellers and buyers produces a kind of personal trust that conventional and placeless food systems cannot provide. Based on the Urbal workshop discussions and data collected through the interviews, we argue that trust is not only an outcome of sustainable food systems, but also an enabling condition of sustainability. In so-called "conventional food systems", while trust is not absent, it is of a different kind. Direct information sharing between retailers or producers and consumers in e-commerce may lead to a more satisfactory mechanism for ensuring trust. However, some online market relations mobilize more conventional trust-building mechanisms, such as labels and certifications. Trust is therefore a mechanism, a process that pervades all the different dimensions of sustainable systems. It mediates transactions between producers and consumers and makes these transactions possible, and in return, the trust that sustains the transactions generates positive effects for both the producers and the consumers. Trust needs to be understood as a dynamic system of relations that is constantly reinforced and re-enacted in a cumulative way through satisfactory and meaningful relations.

7.4.3 Difficulties encountered and adaptations to the local context

We identified two types of limits in the implementation of the methodology: "incidental" difficulties and more "structural" difficulties. Incidental difficulties are due to unexpected factors that may arise during the research process. First, the team encountered difficulties in identifying the innovations to study. For one case study, it successively selected and abandoned two different innovations due to difficulties in accessing information and stakeholders, before deciding to focus on the CNM programme. The COVID-19 crisis affected the implementation of the programme and consequently the research process. Finally, convincing the public authorities and geographically distant producers to take part in time-consuming workshops was a challenge and the team had to rely on long-term relationships with those actors to successfully enrol them in the process. As is customary in Vietnam, a small financial compensation was given to the stakeholders for their participation in the workshops.

Structural difficulties relate more to the specific context in which a methodology is implemented. We have already discussed the difficulties encountered in translating the concept of sustainability linguistically and culturally. Likewise, terms such as "impact" and "pathways" had to be adapted and explained.

Moreover, participatory methodologies are not frequently applied in Vietnam, and the power imbalances arising from explicit and/or tacit authority dynamics as well as the strong state-driven context sometimes made it difficult for some stakeholders to express their views freely in public. However, the individual interviews carried out prior to the workshops afforded rich insights from the actors (especially smallholders) with less power and a smaller voice in the systems of innovation studied. During the workshops, the facilitators managed to create space for each participant's voice to be heard. More generally, they were able to strike a balance between a participatory approach attentive to the stakeholders' understandings of the objectives and their knowledge of the innovation on the one hand, and a more directive approach with incentives and reminders to address sustainability at large on the other.

Several elements from the tentative Urbal process were adapted to the local context. Due to time constraints and the above-mentioned difficulties in translating the concepts, the conceptual framework was not presented in depth during the workshops. Instead, the Urbal diagram of sustainability, which depicts the different "dimensions" encompassed within the concept, was used as a medium for discussion. However, this may have promoted a "reductionist" understanding of sustainability. During the workshop discussions, the facilitators had to constantly remind the participants of the focus on sustainability in general as a holistic concept and not just on its instrumental and functional dimensions.

The study of the CNM programme had to adapt to its work-in-progress situation and to the difficulties it had encountered. The first workshop did not directly address impacts and impact pathways, for the programme was still in its initial stages with no tangible and measurable outcomes thus far. As the innovation had met technical and organizational difficulties, the research team prioritized discussions on how to adapt and modify the activities and the structure of the programme in order to make it work better and, if possible, achieve greater impact. Thus, the focus was more on what *had to be* done rather than on what *had been* done.

This strategy also helped involve the public authorities in the process. At first, the municipality was not convinced about the benefits of the participatory approach. Instead, it was expecting the team to provide its expertise, which posed a challenge for the community-driven methodology. After showing the municipal authorities that the goal was not to assess their innovation but to support them in improving it, the team managed to get them on board. The second workshop to discuss the results focused not on CNM as such but on institutional e-commerce platforms more broadly and their capacity to support sustainability in food systems.

7.4.4 Benefits of the workshops

Beyond the discussions about the impact pathways arising from the two innovations studied, the workshops were useful in building connections between

different stakeholders, allowing them to share their experiences and fostering a sense of community among the different actors. Above all, the participants benefited from the workshops by identifying barriers to and solutions for enhancing the innovations' performance. Although sustainability was not central to the stakeholders' concerns, the workshops were a good opportunity to disseminate a holistic understanding of the concept and to raise awareness about the way in which innovations in urban food systems can potentially result in positive impacts on several interconnected dimensions.

7.5 Conclusion: Strengths and weaknesses of striving for sustainable food systems through digital technology

Digital technology affords a range of new relations between food producers and consumers in the urban space. Vietnamese consumers have increased their online food purchasing as a result of the COVID-19 pandemic. Buying directly through social media apps and digital platforms, as described in this chapter, are examples of such innovations. In Hanoi, consumers using such technologies tend to be young, active, and highly educated women. Sellers are mostly intermediaries, although suburban producers are now also entering the online market. Many operators use these digital technologies to trade quality food products. This reduces the distance between producers and consumers through the sharing of written and visual information and by enabling direct feedback and complaints. Furthermore, e-commerce could promote a territory-based food production system, especially for fresh and perishable products delivered to urban consumers.

The reliability of these new relations is however contingent on a number of conditions being met, such as the service remaining operational, consistently successful deliveries, and governance fostering the participation and coordination of a large number of local producers. Interestingly, the online trading networks that seem to have worked well so far in Hanoi connect sellers and buyers who already knew each other before engaging in a trading relationship. Even though they do not always target specifically sustainable food products, these new marketing channels have the capacity to convey more and better information on food quality attributes as well as production and processing techniques, through direct and personalized communication or the certification of safe products.

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