

# Food System Transformations

Social Movements, Local Economies,  
Collaborative Networks

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## **7 Cost effects of local food enterprises**

Supply chains, transaction costs and  
social diffusion

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# 7 Cost effects of local food enterprises

## Supply chains, transaction costs and social diffusion

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### 7.1 Introduction

The current food industry is not sustainable. The way food supply is organized in industrialized countries is based on the consistent overuse of limited resources. This focus on continuous increases in efficiency (since industrialization) ignores the unavoidable external effects of this mode of production. Producers are subject to competition that destroys smallholder structures according to the motto “grow or vanish”. Contrary to this trend, transformative enterprises and initiatives such as tenants’ gardens, community-supported agriculture (CSA), food cooperatives and regional brands are developing beyond market economy constraints. These enterprises and initiatives aim to establish sustainable, regional and sovereign supply systems through participatory and ecological practices. However, this approach goes hand in hand with a relatively low degree of division of labor and specialization, resulting in a limited potential to exploit economies of scale. This may gradually be compensated for, first by including so-called “prosumers”, who reduce production costs by providing their own services, and second by increasing consumers’ willingness to pay for the enhanced product quality and sustainable production methods.

Conversely, the coordination of voluntary work and participatory organizational structures is accompanied by additional cost categories. In the transdisciplinary collaboration with 27 practical and 11 transfer partners, an “organizational size trilemma” was identified as the central challenge of these transformative enterprises: on the one hand, they must achieve a minimum economically viable size to operate efficiently. On the other hand, social stability requires that a maximum company size is not exceeded to limit the personal effort involved in coordinating relatively non-hierarchical processes. Striking a balance between these size limits should prevent the transformative character of the enterprise from being lost. This marks the third goal of the trilemma.

The central results of this study are: (1) the elaboration of general management principles for supply chain architectures that diverge fundamentally from traditional enterprises; and (2) the classification of different business

models. Particular attention is paid to those factors that contribute to the long-term economic stabilization of these new enterprises and initiatives. In view of changes taking place within the food industry, recommendations for action have been developed for both the stabilization and diffusion of transformative enterprises. In the light of the size trilemma discussed above, the diffusion of transformative enterprises does not take place through the vertical growth of existing enterprises, but through the horizontal spread of newly emerging units.

## **7.2 Institutional arrangements beyond the market**

In our research we examined practical partners operating at different stages of the food supply chain (primary production/cultivation, processing, trade and distribution and complementary service sectors). In the following, we discuss some general findings.

### **7.2.1 Supply chain architecture**

The supply chain architectures of the transformative enterprises investigated exhibit a variety of interactions. In contrast to companies in the conventional food industry, which are mostly characterized by global supply chains, largely anonymous market relations and competition, transformative enterprises rely on short and, wherever possible, regional supply chains. Aspects such as local and regional relationships, trust and transparency become important. The integration of *volunteers in the field of service provision* as well as the *participatory* elements of decision making and design are regarded as high priority. These supply chains are, therefore, referred to as *interactive* supply chains. Figure 7.1 shows how the structure and design of supply chains have changed over recent decades as well as the potential for shaping the value creation process depending on the level of social interaction.

The first stage of supply chain management (SCM) history already deviates from the traditional “factory model” to the extent that companies assume they are part of a network of successive stages in the supply chain, although the areas of procurement, production and distribution still exist as separated functional units. The second form of SCM is based on the tendency to shape supply chains in a spirit of partnership in conjunction with a long-term perspective. The third stage of development is based on an enhanced understanding of the overall process, which not only includes the production as such, but also the development and consumption of a product. Traditional forms of collaboration are supplemented by *principles of solidarity*, which, in the context of the *nascent* project, include active consumer participation, mutual support at individual process levels and joint decision making. An unrestricted flow of information is indispensable in this context (Müller 2005). An even more intensive form of integrating all stages of the supply chain into an *economic community* is characterized by interactions that go beyond pure

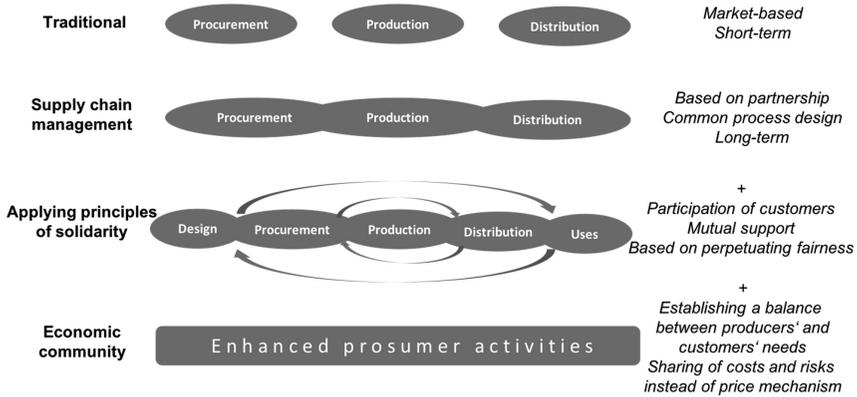


Figure 7.1 Supply chain architecture and social interaction (own illustration based on Bechtel and Jayaram 1997).

process design and optimization (fourth stage). The interests of producers and buyers are reconciled and costs, risks and returns are shared. In addition, buyers are more closely involved in all operational stages: they are comprehensively informed, have a partial influence on business decisions, contribute financially and participate in production, storage and distribution. Therefore, consumers become “prosumers” (Toffler 1980).

This organizational practice embeds economic processes into local and regional relationships. Instead of, or at least in addition to, traditional price negotiations, economic practices take account of the respective economic situation of the partners and their needs. In the best-case scenario, the transaction takes place at a transparent level in mutual agreement according to the principle: “you get what you need: I give what I can”. Very often, the differences in efficiency between partners are not exploited in favor of individual advantages, but are orientated towards benefiting the overall process.

Frequently abandoning the principle of a reciprocal exchange, which otherwise constitutes a market economy, can be attributed to the effect of a long-term congruence of interests resulting from the close integration of all those involved in value creation. The focus is not only on the short-term increase of economic gains, but also on the long-term stabilization of an appropriate overall situation. The plurality of economic activities and procedures is accepted and no one-sided “optimization pressure” is exerted (in the traditional economy often combined with the principle of “grow or vanish”). The *nascent* project has discovered such criteria as fairness, a needs-based orientation, long-term security and partnership support (especially in crisis situations). These may be applied selectively or even established throughout several stages of the supply chain.

### 7.2.2 Developing a typology of transformative enterprises

Although the enterprises and initiatives examined are very heterogeneous, there are common features that distinguish their approach towards traditional marketing strategies. They can be characterized on the basis of their respective degree of market orientation and directness of interaction between producers and consumers. A typology of such enterprises and initiatives can be constructed with reference to four categories (Figure 7.2), three of which correspond to the definition of transformative management used in the *nascent* project:

1. *Subsistence*: self-production (self-sufficiency), e.g., community gardens, tenants' gardens
2. *Prosuming*: community-organized production through financing and/or collaboration between the members, e.g. CSA.
3. *Solidarity commitment*: sale of regional products with solidarity pricing to members and/or customers, e.g. cooperatives of consumers and producers, food co-ops, providers of organic food boxes and regional brands.

In contrast, the category of “sustainable consumption” can be described as the modification, but not abandonment, of traditional marketing strategies. Our surveys suggest that sustainable consumption can become a preliminary stage of transformative economic activity if it is already based on extended consumer–producer interactions, i.e. in the transitional area of solidarity.

Within the framework of the *nascent* project, a total of 16 supply types were distinguished and typologically categorized. In this chapter, we examine

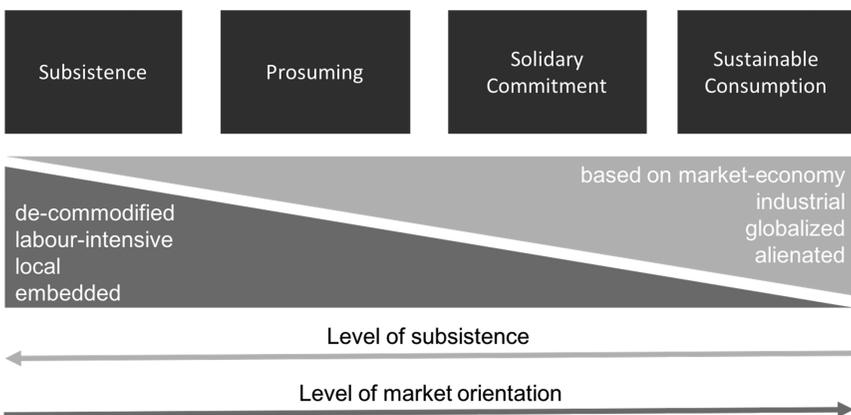


Figure 7.2 Forms of economic proximity / interaction between producers and consumers (own illustration).

some supply types that are particularly relevant in an international context. These are listed in Figure 7.3 and below.

*Regional brands* label food products that are produced according to strict criteria of regional production and processing. The licensors of the regional brands examined by the *nascent* project are registered associations which usually work closely with wholesalers. The structure of these associations allows the extensive participation of civil society to guarantee quality based on the greatest possible transparency. In one of the cases we studied, a wholesale company emerged from the initiative group of the regional brand to become a considerable economic actor in its own right. The declared aim of the regional brands is to act as a strong business partner for the retail trade by enforcing fair prices for regional producers. The products serve as “ambassadors” between the producers and the consumers, to whom a direct contact can only be established through informational, educational and lobbying efforts relating to the regional brand due to the market-oriented selling structure.

*Cooperatives of consumers and producers* unite producers and consumers within one organization. This institutional merger creates direct relationships and proximity and is intended to ensure fair food prices. The market interaction of supply and demand is substituted by a principle of need and solidarity. The members contribute to the basic financing of the cooperative through contributions and deposits. Some cooperatives sell products

Supply type	Function in the supply chain	Description	Typological category
Regional brand	Wholesale	Regional product label to promote regional marketing and quality assurance	Solidary Commitment (transition area to sustainable consumption)
Cooperative of consumers and producers	Retail / wholesale	Institutional association of producers and consumers with the aim of a direct, fair and long-term purchasing relationship.	Solidary commitment
Provider of organic food boxes	Retail	Marketing of own or purchased products via regular delivery to the consumer	Solidary commitment (transition area to sustainable consumption)
Food Co-op	Retail	Consumers' association for the common purchase of organic food (usually through wholesalers)	Solidary commitment
Community Supported Agriculture	Cultivation - retail	Agricultural supply community for guaranteed pre-financing of operating costs via solidarity contributions with variable possibilities of participation	Prosuming
Tenants' gardens	Cultivation	Seasonal rental of arable land for self-sufficiency and leisure activities with support services	Subsistence
Community garden	Cultivation	Management of a common garden area, social learning space	Subsistence

Figure 7.3 Transformative supply types (own illustration).

to members only or use a dual pricing system that differentiates between members and non-members in their shops. Members are often expected to provide practical assistance, although some cooperatives have abandoned this principle. In the course of their economic development, one *nascent* practice partner was forced to privatize the sales shops as well as having to convert further core areas of the operative business into a regular company. Overall, this transformative enterprise has now adopted three organizational forms, operating variously as a regular company, a cooperative (where important content areas such as product planning and the further development of the company's own brand are located) and a non-profit association (primarily responsible for educational work and ecologically sustainable projects).

A *provider of organic food boxes* distributes agricultural products to consumers in the form of a regular delivery service. This can be organized by the farm or by an independently operating trading company and can contain both the company's own (regional) and purchased products. Consumers can choose different types of subscriptions and decide on the contents of the food box. The suppliers examined within the framework of the *nascent* project are retail enterprises that have established close contact with regional producers. They distribute their products, supplemented by wholesale goods, directly to consumers. A reliable customer relationship is established on the basis of personal contacts and appreciation for the service, which helps to secure sales and prices.

The term *food co-op* refers to a consumer group organized for the common purchase of organic food, often in the legal form of a registered association, but which can also take the form of an informal initiative. The goods are often purchased from wholesalers. Depending on their size and structure, some food co-ops purchase directly from producers and processors in the region and beyond, placing particular emphasis on sustainability and fair trade. In the food co-ops that we reviewed, all work, including ordering, goods acceptance, distribution and invoicing, is done on a voluntary basis.

CSA is defined as a group of private households that bear the costs of a farm in return for a share of the harvest. Members receive seasonal products from the farm and, if necessary, additional products from associated enterprises based on goods exchange (bartering) and direct purchase. The pre-financing of operating costs through solidarity contributions facilitates the emergence of a new development perspective for small-scale organic agricultural units. At the same time, opportunities for participation are opened, both in terms of work practice and organizational tasks. The difference from the other transformative supply types is that no products are sold, but the entire agricultural production is jointly sustained (economic community). Some CSA organizations are combined with grassroots democratic control of the entire enterprise whilst others limit member participation and focus on practical labor contributions. The legal forms adopted by such organizations range from registered associations and cooperatives to dual structures in which the agricultural enterprise has a traditional legal form and the members' group

(consumers) is organized separately either as a registered association or as an informal initiative.

*Tenants' gardens* are areas that can be leased by individuals for a season. The tenants are responsible for cultivation and harvesting. The relationship between lessee and lessor is clearly defined. The lessor (usually an agricultural enterprise) is responsible for soil preparation and initial planting and also provides the infrastructure, e.g. irrigation, fencing, etc. They also provide the tenants with all necessary information, equipment, seeds and young plants. The tenants are responsible for everything else. Community building in tenants' gardens varies greatly according to individual needs. In addition to local providers of tenants' gardens, some enterprises have established themselves throughout Germany and are developing nationwide labels for tenants' gardens and manage the relationships between tenants and landlords on a franchise basis.

In *community gardens*, the focus is on the joint gardening and management of an urban agricultural area. In contrast to tenants' gardens, all functions are organized by the gardeners themselves. Operational and gardening tasks are decided upon in a participatory manner. Community gardens are primarily to be understood as social learning spaces and differ in terms of their agricultural productivity. The legal form is usually a registered association.

### **7.2.3 Main business traits**

By overcoming traditional market strategies, transformative business characteristics become relevant in different forms and can be classified by the following characteristics:

#### *7.2.3.1 Convivial technology*

In contrast to the agricultural industry, transformative enterprises tend to be less technology-intensive. In the spirit of "convivial" technologies,<sup>1</sup> machines are mainly used to support human activities rather than to replace them. This approach is typical of the CSA enterprises as well as the community and tenants' gardens. The technology used is usually designed to cultivate small areas. Robust devices are often used, e.g. tractors that can be repaired with one's own means and can serve a wide range of purposes. Transformative retailers make use of convivial technology (e.g. the delivery of vegetables with electrically assisted load bicycles), albeit to a lesser extent. In addition, our empirical results show that most of them collaborate with agricultural enterprises that do not place any particular emphasis on mechanization.

#### *7.2.3.2 Greater intensity of work and employment of versatile workers*

A lower capital intensity goes hand in hand with increased manual labor. Small-scale farming, e.g. vegetable production with labor-intensive crop

cultivation, as practiced in CSA, leads to a higher demand for a versatile, i.e. less-specialized, workforce, which implies lower labor productivity. However, this increases flexibility and resilience and reduces dependencies on technology and capital. The reduced capital requirement substantially reduces the entry barrier for the establishment and development of new enterprises. This may weaken the pressure to maximize profits or, ideally, completely eradicate it. In addition, volunteers and prosumers are given the opportunity to assist and participate. On the other hand, a smaller farm size corresponds to higher average costs because economies of scale cannot be exploited.

In combination with alternative agricultural farming practices, such as *organic farming*, *permaculture* or *agroforestry*, intensified manpower can also enable higher productivity per unit area whilst simultaneously reducing the use of raw materials and increasing resource efficiency. Furthermore, artisanal practices, such as preservation, are reduced throughout by reducing waste and increasing food efficiency. This harmonizes with the ecological objectives of transformative enterprises.

#### 7.2.3.3 *Prevention of external effects/provision of ecosystem services*

The transformative enterprises observed in the course of this study tend to pay attention to seasonality in their supply, to reduce energy-intensive refinement steps, to preserve older plant varieties and livestock breeds, to value high quality and health, to avoid packaging materials and to ensure maximum recycling of the production and consumer goods used. To varying degrees, their production methods are oriented towards an ecological cycle that is as closed as possible, thus conserving resources.

Whilst the externalization of environmental damage is a decisive “production factor” of industrialized agriculture, transformative enterprises try to overcome the lack of responsibility through local and regional management and cooperative action. Instead of generating external effects, ecosystem services are provided, which serve the community for the common weal.

#### 7.2.3.4 *Collaborative action*

With certain exceptions, our empirical observations revealed the existence of collaborative patterns throughout the supply chain, the intention being to replace competition in favor of long-term stable partnerships and the immediate satisfaction of the needs of all participants, which becomes the basis for *structural responsibility*. This process requires recursive negotiation and an understanding of individual needs and, therefore, an active contribution from all participants (Acksel et al. 2015, 140–141). A couple of the initiatives reported that some of the participants appreciate their strategy to such an extent that they decide to support them by investing in them even when the expected returns are low to non-existent. This is based on shared motives of investors and producers. The main success factors

cited by the surveyed participants include facilitating a sense of community, the involvement in networks and the shared value base of the respective initiative. This helps many transformative enterprises to raise capital without providing significant returns, as some investors do not claim risk premiums.

A prerequisite for this community effect and low return expectations are supply chains that reduce the distance between producers and consumers who could be investors at the same time. The spatial proximity enhances trust and empathy. A return on interest or equity is substituted by the benefit of belonging to a community of solidarity or supporting local structures. If consumers are at the same time investors in the production organizations, trust can arise as a result of the associated transparency. The need for risk compensation is significantly reduced to the extent that consumers would harm themselves by demanding higher returns, which would inevitably result in price increases. Whilst a more favorable alternative provider could be chosen in the market, which, for example, succeeds in externalizing costs more efficiently, remaining loyal to a single provider resolves this dilemma. An essential factor for building reciprocal trust in transformative enterprises is the organizational involvement of consumers as co-producers or prosumers.

#### *7.2.3.5 Participation and co-determination*

Participation and co-determination are indispensable stabilizing elements of transformative enterprises and, in many cases, promote customer loyalty and thus economic security. Consumer inclusion was found to be characteristic of all the transformative enterprises studied: it creates trust, reduces anonymity and strengthens sustainable relationships to establish transformative economic methods as alternatives beyond the conventional market logic.

Distinctive participatory structures, even direct co-determination, can be found particularly in community gardens, CSA, food co-ops and consumer-producer cooperatives. Some of the participation options such as tenants' gardens tend to cover practical activities. Selective participation rights (e.g. definition and monitoring of a regional brand's product criteria) can be applied to soften or overcome hierarchical structures.

#### *7.2.4 Resulting cost structures*

Our research has shown that transformative enterprises and initiatives

- create new forms of social interaction
- face challenges caused by special cost structures
- are confronted with special requirements in terms of the social stability of their organizational forms
- are not growth-oriented

- require new strategies to disseminate their respective organizational forms.

If they are able to meet the related challenges, transformative enterprises can deliver services whose social and environmental quality would be unlikely, or even impossible, under market conditions. Nevertheless, these enterprises face competition from other suppliers oriented towards conventional business aims, which presents certain challenges in particular due to lower labor productivity compared with traditional standards. This results from the involvement of prosumers and a lower degree of specialization and technology.

To analyze these challenges, three relevant cost categories must be distinguished:

1. *Production costs*, such as manufacturing, distribution, marketing
2. *Transaction costs type 1*: these include collecting information, contract negotiation, coordination and communication of business processes
3. *Transaction costs type 2*, which are associated with the stabilization of participatory processes in non-hierarchical organizations.

The latter are caused by different activities:

- Coordination and instruction of voluntary participants/actors
- Allocation of responsibilities and competences
- Managing complex decision-making processes (including different roles, opinions and perspectives)
- Solving conflicts caused by lack of transparency and contrary (but hidden) motivations and opinions: (1) intrinsic, content-related; (2) community-oriented, (high) expectation of social recognition; (3) expecting personal benefits
- Solving personal conflicts between persons who are highly (emotionally) attached to the organization.

The challenge lies in balancing the advantages of voluntary participation with the organizational difficulties involved in handling their integration. Our empirical findings confirm earlier studies (Erlinghagen 2000), which suggest that the inclusion of volunteer work resulting from self-administration results in cost savings, social closeness and trust, but that it also increases a certain category of transaction costs (type 2). Therefore, transformative enterprises *reduce* traditional external transaction costs (type 1) and production costs as a result of consumer participation, practical and financial support and the avoidance of market-based transactions. On the other hand, *new* transaction costs (type 2) arise. These costs place upper limits on organizational size in terms of the number of participants interacting in a gradual non-hierarchical system. Otherwise it may become

too costly or even impossible to stabilize the organization with regard to social conflicts, a lack of formal incentives for being productive and coordination efforts.

### 7.3 The trilemma of operational stabilization

A central finding of our study is that transformative enterprises operate within a three-way nexus of economic stability, social stability and transformative character. An adequately sized management team is needed to balance this trilemma (Figure 7.4).

Some supply types ignore this trilemma by professionalizing and/or hierarchizing themselves (at the expense of transformative characteristics) from the outset or in the development process. Others stick to their participation orientation ideals, which can mean not growing beyond a certain production capacity, thus risking their economic viability due to excessive average costs. Preserving the transformative character and economic stability of the organization raises the problem of upper and lower organizational limits, which mark a consistent development corridor.

#### 7.3.1 The upper-limit problem

The prosumers who participate in the enterprises surveyed have to meet high requirements with regard to reliability, skills and time resources (general meetings, agreements, voluntary work, democratic decision-making processes, etc.), which may result in personal and social overload. In particular, implementing participatory or democratic elements (as is the case, for example, in community gardens, food co-ops, CSA and consumer–producer cooperatives) can create immense coordination and management challenges. Organizational growth (due to increasing demand, supply chain complexity, etc.) increases the effort required to avoid social conflicts and time-consuming

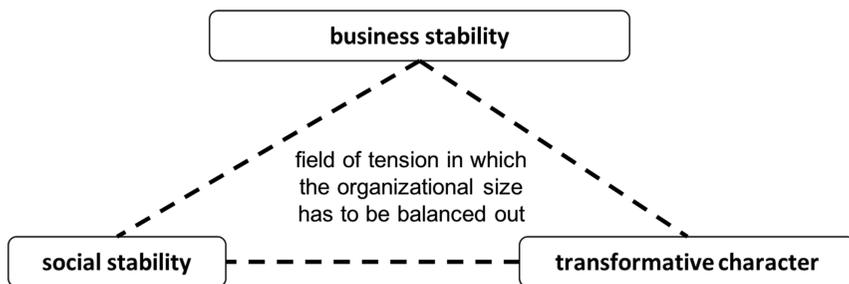


Figure 7.4 The trilemma of transformative size management (own illustration).

decision processes more than in conventional enterprises, thus lowering productivity.

Particularly as a result of voluntary participation, transformative enterprises face control problems that can no longer be handled within a gradually non-hierarchical organizational design once an *upper limit of the number of persons involved* has been reached. This upper limit depends on the structure of social interactions involved in decision-making processes. The high standards of participation correspond to special institutional arrangements. Their functionality requires informal relationships within the value creation process to be designed with a view to reliability and freedom from conflict. In conventional enterprises this problem does not arise since social stabilization is determined by formal contracts, monetary incentive mechanisms and organizational hierarchies.

Many CSAs and food co-ops are trying to consolidate their administrative and coordination activities on a permanent, voluntary basis. It cannot be ruled out that, after a first phase of high motivation, the participants may be overburdened and may experience conflict situations. This means that operational disruptions are inevitable, as conflict situations, unclear responsibilities, flagging motivation or a lack of reliability are extremely time consuming and require extra personnel for moderation and clarification purposes. But even beyond any social exacerbations caused by overwork, stress and demotivation, the fulfillment of democratic demands alone, especially non-hierarchical decision-making processes, means that time-consuming coordination efforts have to be made, which have a negative impact on the actual added value.

The only alternative to an upper limit to handle these challenges would be a stronger formalization through monetary incentive structures and contractual ties which would mean imitating the very structures that transformative initiatives aim to overcome. Indeed, some of the cooperatives and regional brands analyzed during the study are more formalized and have, therefore, restricted the participation structures. This increases their growth potential, but entails the risk of increasingly adopting conventional organizational principles.

### **7.3.2 *The lower-limit problem***

Transformative enterprises are also confronted with the difficulty of covering their costs. Assuming that economies of scale are relevant to some degree in conjunction with a specific product price or a level of willingness to pay, a certain minimum production capacity is required to cover costs. This minimum capacity is correlated with a minimum number of members needed to run and organize the transformative enterprise. To mitigate the pressure of being big enough to survive, some transformative enterprises try to reduce costs by including consumers in parts of their production process (prosuming). Whilst this does alleviate the growth imperative, a minimum production capacity needed to survive can never be completely avoided.

The situation may escalate if the number of members or prosumers corresponding with this minimum capacity exceeds the organizational size of the company that is consistent with social stability. This would be the case, for example, if more resources are needed to coordinate voluntary activities or to moderate participatory decision-making processes than can be financed by revenues. Even if the effort required to deal with these challenges is based on voluntary activities, self-exploitation or insolvency could be the consequence.

### 7.3.3 Survivable development corridor

Many transformative enterprises are faced with the dilemma of having to be large enough to cover their costs but not too large since otherwise social dynamics could not be managed due to the lack of formal contracts (Figure 7.5).

The survival of transformative enterprises requires developing the organization within the upper and lower boundaries, which raises two central questions:

1. *Lower-limit management: minimum farm size to be economical*  
 What sort of measures can influence the cost structure to reduce the minimum survivable size? To what extent can prosumers contribute to cost reductions? How can consumers be motivated to pay more to cover non-competitive average costs?
  
2. *Upper-limit management: maximum company size to achieve social stability*  
 How can transformative enterprises lower costs and the effort required for coordination and decision-making processes within a more or less non-hierarchical set-up?

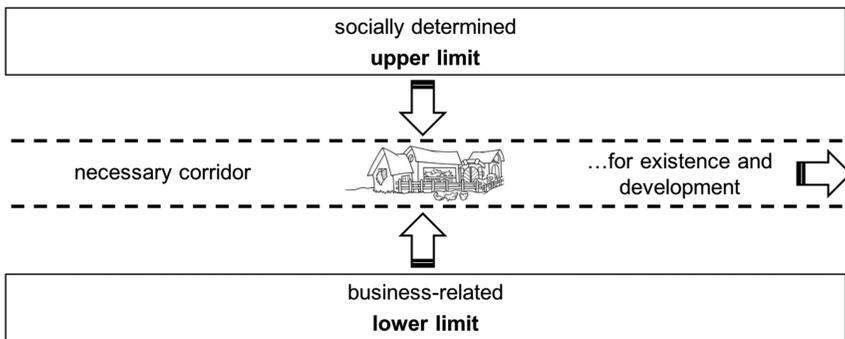


Figure 7.5 Survivable development corridor of transformative enterprises (own illustration).

Measures to address higher production costs and to increase the acceptance of comfort losses	Measures to reduce type-1 transaction costs	Impact on type-2 transaction costs (examples)
Acceptance of higher average prices	Reduced management and coordination costs by the self-organization of the distribution process	Additional coordination efforts
Change of lifestyle: adjusting the preferences for regional specialties		Additional allocation efforts, e.g., caused by the fluctuation of competent actors
Acceptance of a seasonally fluctuating diversity		Time consuming discussions and decision processes
Voluntary labor contributions in the production process (case-specific)	Additional voluntary contributions to organize further business processes (e.g., marketing)	Time consuming conflict management and resolution measures
Minimization of wastage / non-marketable products (e.g. distribution of un-washed carrots, crooked cucumbers)		Incalculable processes are normally regarded as threats, thus absorbing attention (and reduce work capacities)
Minimization of further treatment (e.g. cleaning, packaging, storage, cooling)		Brainwork and 'emotional work' to maintain the motivation of voluntary actors and to ensure a 'reproduction of sense-making'
Minimization of traditional marketing efforts		
Risk sharing		
Reduction of transport costs through simple SC structures / short distances		Higher level of awareness is necessary

Figure 7.6 Activities of transformative enterprises designed to deal with production costs and traditional transaction costs and the effects on the new cost factor “type-2 transaction costs” (own illustration).

Note: SC, supply chain.

Due to their organizational (degree of market orientation) and functional (supply chain focus) heterogeneity, each supply type corresponds to a specific development corridor, which has to be determined individually.

Figure 7.6 shows various measures that can be taken to cope with the size dilemma, especially to reduce production and transaction costs. The third column lists examples of how these measures affect type-2 transaction costs.

### 7.4 Strategies for the dissemination of transformative enterprises and initiatives

Based on the measures described above, a transformation of the entire food sector would require a horizontal dissemination of transformative suppliers. Building on this, synergies between different supply types within a regional economic network can be applied. Furthermore, an established regional agricultural structure could be spread geographically.

#### 7.4.1 The compatible diffusion process: small is beautiful and stable

Multiplying transformative suppliers requires balancing stable sizes for each specific type. Traditionally, diffusion processes are based on a normal distribution of adopters (Figure 7.7). The start of a diffusion process is carried by a small number of *innovators* and *early adopters*. Their opinions, shared experiences and innovation assessments are essential for the adoption by the next cohort of adopters, who in turn influence more risk-averse and less change-affine *adopters*. According to Wüstenhagen et al. (2001), this trend is transferable to the behavior of *companies*. They assume that an innovation that is successfully introduced by smaller or new pioneers (“Davids”, marked

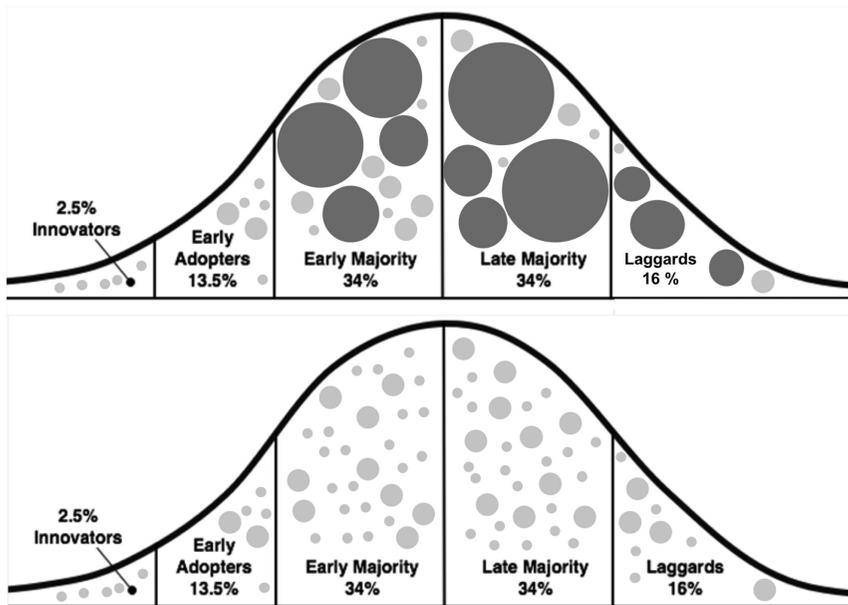


Figure 7.7 Diffusion process, adopter groups and company sizes (own illustration based on Rogers 2003).

light gray) will be followed by a phase of acquisition by larger companies (“Goliaths”, marked dark gray), which will integrate the innovation into their operations (for example, organic products and private labels in conventional supermarkets). Large companies within the food industry have very often included sustainable innovations in their programs.

This diffusion process, which is based on the vertical growth of individual companies (first graph), contrasts with transformative forms of change since it preserves large and hierarchical supply structures. These attempts to transform the food sector by commercializing sustainable products within a conventional supply chain architecture have failed.

Alternatively, a *horizontal multiplication of transformative suppliers*, which takes account of the trilemma described above, could form a decentralized structure rather than a scheme involving the vertical growth of conventional companies. Horizontal multiplication is based on creating replicas of functioning transformative economic units where additional demand arises (second graph). This can either be *decentralized* and *autonomous* in the sense of an *open-source concept* or *centralized* or hierarchical in the sense of a branch system.

CSA is expanding, for example, by founding new *CSA enterprises* or converting existing small-scale farms to the *CSA concept*. However, the individual organizational unit only grows up to its socially and economically viable upper limit. The production growth of the individual farms is based on the specific agricultural land conditions in conjunction with consumer interests. As soon as the production capacity ceiling is reached, new consumer enquiries are placed on a waiting list. Instead of investing in new land and hiring more staff, to increase output, the community usually supports other CSA projects under development. *Community gardens, food co-ops* and *consumer–producer cooperatives* also diffuse horizontally according to this model.

Providers of tenants’ gardens exemplify the centrally organized duplication of small units based on a nationwide marketing strategy and coordination according to the franchise concept. In this case, participatory decision-making processes are restricted. A combination of decentralized and autonomous dissemination may be carried out by a central institution that supports small units through advisory, information and networking services.

#### **7.4.2 Regionally based transformative food systems**

A transformative food system can be defined as a region consisting of complementary and collaborating transformative suppliers. This increases the resilience of participating companies as well as consumers and the regional economy as a whole. First, insofar as consumers become prosumers, they regain nutritional competence and food sovereignty based on the ability for self-sufficiency and preparing their own food. This can be supplemented by adapting demand to the prevailing seasonal and regional conditions. This mode of supply avoids complex transport and logistics infrastructures and,

therefore, dependence on fossil fuels. Short distances between production and consumption enhance resilience.

Such food systems can be supported by providers of consulting and network services. The *CSA Network*,<sup>2</sup> for example, offers largely free management consultancy, arranges support for special challenges and facilitates contacts to stable pioneers as inspiration. *Food policy councils* (Mendes 2011) are suitable coordinators, networkers, lobbyists and initiators who facilitate dialogue and offer a platform through which transformative enterprises become better known and attract new members or demanders. Similar projects, such as *Regionalwert* (Hiß 2014), act as a promoter for regional and ecological businesses, mediating between investors and ethically oriented investors.

The more diverse the complementary supply types in a region, the greater the number of people with different preferences and abilities, who can be motivated to participate. If a regional transformative food system is successfully established and stabilized, it can be transferred to other regions as a blueprint.

#### 7.4.3 Effects on the macroeconomic basis

Potential effects on the food sector as a whole can be summarized by five scenarios (Figure 7.8).

- *Scenario 1*: because of their (self-)limitation and limited geographical spread, transformative enterprises have only a minor diffusion effect and remain long-term niche organizations.
- *Scenario 2*: transformative enterprises are spreading rapidly and to a numerically relevant extent *in addition to the* already-established food

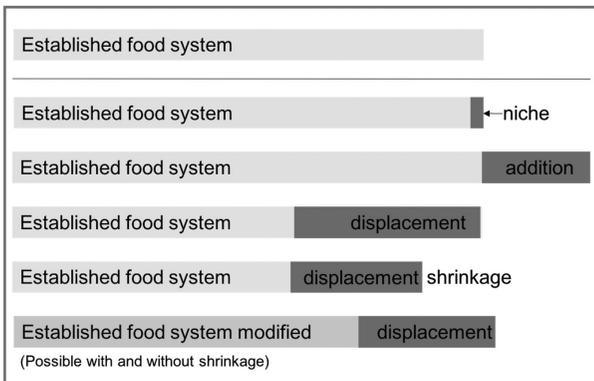


Figure 7.8 Potential scenarios of the diffusion effect of transformative enterprises and practices (own illustration).

system. They do not bring about structural change but increase the range and quantity of production.

- *Scenario 3*: transformative enterprises are spreading rapidly and to a numerically relevant extent *displacing* traditional food production. The substitution of the industrial agricultural economy by transformative forms implies a structural change of the supply system.
- *Scenario 4*: transformative enterprises are spreading rapidly and to a numerically relevant extent, displacing traditional food industry practices. In addition, transformative economic practices, combined with a higher appreciation of food, help to ensure that fewer surpluses are produced and disposed, so that the overall output *shrinks*.
- *Scenario 5*: the diffusion of transformative enterprises causes the established food system to raise the ecological quality standard.

It seems possible that some of these idealized scenarios may occur as a sequence.

From an ecological perspective, the most desirable scenario would be a reduction in total material turnover and a parallel displacement of the industrial coined food sector.

## 7.5 Conclusion

Transformative enterprises and regional food systems are more than a basis for more sustainability and resilience. They form the antithesis to an agro-industrial structure which, due to its complexity, can no longer be controlled democratically. This aspect is regularly manifested in various food scandals. The media, politicians and the public are responding by demanding stronger controls, new consumer protection institutions and laws. However, these demands are not sufficient because they are not cause-adequate, but legitimize a supply system in which organized irresponsibility is inevitable. Breaking the production of goods down into many isolated processes to increase business efficiency creates a chain of specialized and independent organizations. The resulting spatial and functional differentiation results in the distribution of responsibility for the entire process among so many organizations that it is erased. Each decision maker, who only deals with a partial aspect within complex process chains, pursues his or her own rational objectives based on their isolated task areas.

Since the consequences of the entire process, in particular for the ecosystem and consumers, remain invisible to the actors involved, “moral indifference” is created (Bauman 2002, 32). Within the economic orientation of their individual organization, the actors involved ultimately “only do their duty”. This immunization against ethical and other non-economic rationales also applies to consumers. Consumers generally demand goods they have not produced themselves. Consumption and production thus form separate spheres. Between the emergence of a need and the production it triggers, there

are many unmanageable isolated actions chained together over considerable distances. Delegating executive tasks and decisions over many stages results in “mediatization”, i.e. a mediation of actions (Lachs 1981). These are basically carried out by a third party who “stands between me and the consequences of my actions, so that these remain hidden from me” (Bauman 2002, 38).

Therefore, the essential principle of modern functionally differentiated societies creates pathological conditions under which microeconomic decisions are almost perfectly shielded from feedback and thus moral inhibitions. Attempting to control supply systems that have become too complex, particularly when the physical and psychological distances between consumption and production have grown, is as promising as searching for a needle in a haystack. This has long been the case in the food sector.

Only more direct relationships between the consumption and production sides, as practiced in transformative enterprises, e.g. those surveyed by the *nascent* project and discussed in this chapter, create social conditions under which responsible economic action becomes probable. Those who are confronted with the feedback of their own actions, which emanate from a visible and tangible counterpart, follow an inner moral seismograph instead of economic incentives to act sustainably. “Responsibility, the basic element of moral behavior, arises from the proximity of the other. Closeness means responsibility and responsibility is closeness” (Bauman 2002, 198).

## Notes

- 1 According to Illich (1973), conviviality characterizes a technology whose use is easily accessible because it is not complex and is based, as far as possible, on collaboration.
- 2 Accessable via: [www.solidarische-landwirtschaft.org/index.php?id=92](http://www.solidarische-landwirtschaft.org/index.php?id=92)

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