ANALYSIS OF FOODSHARING IN THE INTERESTS OF SMALL AGRIBUSINESS DEVELOPMENT

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ABSTRACT

Thanks to the development of the digital economy, a new economic model, the economy of shared consumption, is becoming more widespread. It is part of online foodsharing, a little-known phenomenon that combines elements of business, charity, digital economy, and shared agriculture. This online sharing is of the online social network. Foodsharing is closely linked to agriculture and has an impact on it. Foodsharing involves certain risks for small businesses in agriculture. Therefore, there is a problem with state regulation in order to eliminate these risks.

1. INTRODUCTION

In this article, foodsharing refers to the activities of individuals and legal entities to redistribute food from people who do not need them to people who need them. By sharing, the authors mean providing something for shared use at no cost or at a price lower than the normal price. The greatest scientific interest is caused by the organizations of the agro-industrial complex in the form of small businesses that are willing to transfer their products for free for some reason.

This study focuses on organizations of the agro-industrial complex in the form of small businesses that sell agricultural products and participate in food-sharing using the opportunities of the digital economy.

The object of research is the mechanism of state regulation of food processing.

The choice of the research object was determined by several factors. The General problems of regulating the sharing economy are studied by various authors, while the problems of regulating the actual foodsharing have not been disclosed. The phenomenon of foodsharing itself is not positive or negative, it has both advantages and disadvantages. Foodsharing is developing dynamically all over
the world, but its development is uncontrolled and unregulated. As a result of the uncontrolled
development of food-processing, small entrepreneurs may leave the agricultural market and lose their
income due to a drop in demand for their products. The development of the digital economy can only
accelerate and strengthen this process. The factor in choosing the research object is the long-term
work on the problems of state regulation of agriculture, socio-economic problems of creating and
functioning of small businesses in the agro-industrial complex.

The following tasks were set and implemented, determining the logic and structure of the study:
- identify the relationship between the development of the digital economy and the growing
popularity of foodsharing;
- evaluate the prospects of foodsharing in comparison with other sectors of the economy of joint
consumption;
- describe the advantages and disadvantages of foodsharing that are important for justifying the
choice of forms and methods of regulation;
- determine why small businesses are most actively involved in foodsharing;
- to establish the fundamental possibility of state regulation of activity of participants furthering
the development of agribusiness organizations in the form of a small business engaged in the
marketing of agricultural products.

2. LITERATURE

The concept of "foodsharing" has entered scientific circulation recently. The economic theory
considers the phenomenon of foodsharing as a public good, a non-profit way to redistribute food and
reduce the cost of disposing of unused food. Political scientists, sociologists, and environmentalists
are also engaged in the study of foodsharing. There are publications about foodsharing in the context
of media science, application programming, and others.

Note that foodsharing is an element of a new economic model – the economy of shared
consumption. The object of research is most often media services, car-sharing, and co-working. In
scientific literature, the problem of regulating foodsharing has not been sufficiently studied.

In the report of the Association for electronic communications, state regulation of
food-processing "related to the determination of the status of food-processing products and their
taxation" is considered as a prerequisite for realizing the potential of food-processing in Russia
(Foodsharing in Russia).

Prof. Shor (2016) studied the existing models of the sharing economy, concluded that it is
necessary to regulate it, noting that commercial platforms do not oppose state regulation and
coordination of activities to the extent that does not interfere with their natural development (Schor.

Ayusheeva (2019) notes the absence of mandatory norms of civil legislation in the field of
carsharing, which illustrates the lack of development of the legal mechanism for regulating the
sharing economy.

Karolina Zurek (2016) emphasizes the need for a "balanced approach to the management of
foodsharing in the European Union", taking into account the potential risks of foodsharing itself and
the risks arising from the intervention of regulatory authorities.

Currently, there is no legal regulation of foodsharing. In some cases, foodsharing is legally
equivalent to distributing food to the homeless. So, the laws of Pasadena, California, require that "hot
meals that will be provided to the homeless must be prepared in verified locations" (Kim). As a result,
many organizations and individuals are unable to share hot food with those in need. Extending this rule to foodsharing means that volunteers and organizations that might be engaged in foodsharing will not be able to do so (CEF, 2014). The legislation of St. Louis, Missouri, requires individuals and organizations to pay for permission to distribute products. A temporary permit costs $50 per event, and the annual fee can range from $150-300 (Wicentowski). Without permission, only packaged food can be distributed. It is believed that such a measure can also scare off activists (CEF, 2014).

Legislation in most US States requires that agricultural products sold to the public be processed on an industrial basis. Separate exceptions exist for baking, muesli, and some other "potentially non-dangerous" products. In the state of California, the retail food code explicitly lists home cooking as a place where commercial processing of agricultural products is not possible.

Most researchers described foodsharing treat it as part of the economy of shared consumption, without identifying the fundamental features of foodsharing (Zhidkov, 2017). Some authors see foodsharing as a solution to environmental problems (Michelinia et al., 2018; Corbo & Fraticelli, 2015; Harveya et al., 2019). Most often, the emergence and development of foddering described as an obvious result of the combination of several factors - the development of the digital economy, lower standard of living of the population, mainstreaming environmental issues, the general trend in the economy. The value of each of these factors was not evaluated separately by researchers of the shared consumption economy.

Since foodsharing as a phenomenon is gaining popularity in society, and its quantitative characteristics are steadily increasing (Sarti et al., 2017), there is an objective need to study the possibility of state regulation of foodsharing to ensure the economic, environmental and food security of all its participants.

3. METHOD

Theoretical analysis has shown the heterogeneity of approaches to the definition of foodsharing. Comparison as a method of cognition allowed us to identify similar branches of the sharing economy to foodsharing. The method consisted of transferring the existing mechanisms of regulation of certain elements of the sharing economy to foodsharing. A systematic approach was used to establish the relationship between the development of the digital economy and foodsharing. The method of scientific abstraction allowed us to determine the most logical results of the development of a small business enterprise, depending on its participation or non-participation in food-processing. The principle of combining the historical and logical in their unity allowed us to look at the development of the sharing economy as a long process, the development of which will continue in the future, and the logic of which indicates the need for intervention in this process at the state level.

Theoretical involves economic theory, state regulation of the economy, scientific publications of Russian and foreign scientists on issues of digital transformation and development of the sharing economy, the statistical data obtained as a result of these studies.

4. ANALYSIS

4.1 FOOD SHARING ECONOMY

Foodsharing is a part of the economy of shared consumption, along with car sharing, the
provision of real estate, multimedia files (movies, TV series, music), and other elements. There is no fixed definition of foodsharing, see Figure 1 for a general idea.

The economy of shared consumption has a long history. First of all, libraries (sharing books without purchasing them), charity shops (receiving goods for free and distributing them to the needy or selling them not for profit, but to finance their own existence), dormitories, second-hand shops, etc. were subjects of the economy of shared consumption (Holweg & Lienbacher, 2011). These entities are still functioning and will continue to exist for some time. The question arises as to why and how the sharing economy became popular. In our opinion, the answer to this question should be found in the history of the world economy. In the second half of the twentieth century, after overcoming the consequences of the Second World War, the world economy grew rapidly. Along with it, the incomes and living standards of the population in developed countries grew. The growth of the world economy has resulted in benefits that were previously inaccessible to the majority of the population: individual ownership of the real estate, vehicles and computers, global tourism, and free access to a huge amount of information. After the global financial crisis, income growth slowed, and the benefits to which the population had already become accustomed became partially or completely inaccessible. The current economic model does not offer a solution to this problem. After the fall of the "iron curtain" and as a result of the general trend towards globalization in the psychology of people, individualism began to be replaced by multiculturalism. In our opinion, these factors have led to a shift in priorities from private ownership to shared consumption.

The scientific problem is the justification for the existence of a relationship between the development of the digital economy and the growing popularity of foodsharing, explained by several factors. In contrast to the sharing of industrial goods, the subject of foodsharing is agricultural products. Regardless of the level of processing, these products, firstly, have a short shelf life, and, secondly, are completely consumed by those who use them. For the sharing of food products to become possible in volumes that are important for the national economy, it was necessary to speed up the sharing procedure that the product would not get deteriorated and preserve consumer qualities. Traditional media were not suitable for this task. By the end of the XX century, a new phenomenon appeared – online sharing, that is, the appearance of movies, music, images, books, and other content in open access on local networks or the Internet. Increasing the popularity of online sharing has
contributed to the increase in data transfer speed and the growth of the number of users of personal computers around the world. The key moment of the emergence of foodsharing in the modern sense was the interpenetration of online and offline sharing. In the library business, this phenomenon has contributed to the development of bookcrossing, replacing video rental (rental of videotapes and disks) came media services (online cinemas, digital music libraries, streaming services, etc.). Thus, the priority for foodsharing is to increase people's engagement in social networks (Facebook, Vkontakte, Odnoklassniki, etc.). There are large communities of people who are purposefully engaged in foodsharing, and not only the recipients of products.

What is the significance of foodsharing for the development of the digital economy and agriculture? Obstacles to the digitalization of agriculture have been studied and ways to overcome them have been established (Voronin et al., 2019). The spread of foodsharing means not only an increase in the number of activists. The producer and consumer have a positive collaboration. If a consumer purchases products from an entrepreneur who is engaged in food processing, then the effect is similar to that of organic products. The consumer sees this seller as a more socially and environmentally responsible entrepreneur and, all other things being equal, gives priority to this supplier. Therefore, foodsharing has a competitive advantage and you must meet some conditions, including the use of online platforms, involvement in social networks, the use of non-cash payments via the Internet, and the availability of feedback. These are the same conditions that all participants in the digital economy must meet. An activist who does not initially expect to interact in the digital economy gets all the necessary skills for this and gets the ability to participate in other digital projects. As these skills improve, it can evolve from digital consumption to creating its own project in the digital economy. Thus, the development of foodsharing, although not included in the Digital economy project (The Digital economy…), creates three positive effects for the digital economy:

- involving more people in the digital economy;
- formation of people's necessary competencies for active participation in the digital economy;
- creating prerequisites for the emergence of new digital projects.

4.2 RISK OF FOOD SHARING

Foodsharing, having several positive qualities, still needs to be regulated by the state. In our opinion, the need for state regulation of food processing is explained by the existence of potential opportunities for harming consumers and bona fide sellers of agricultural products. These risks include the following

Risk of the negative perception of innovations. The case of entrepreneurs Yana Gurova and Artak Hakobyan showed that free distribution of food by individual entrepreneurs is perceived by citizens not as charity, but as a duty (Fedotova, 2018). Free products are taken not only by those who really need them but by those who can pay for them. This implies a different risk.

Risk of falling revenue. Let's look at a specific example. The farmer sells his products through the integrated social network service "Goods" and is engaged in foodsharing of his products through the same social network. But unscrupulous customers can place an order from a fake account and then cancel it. Due to the loss of time and expiration date, the farmer will transfer this product from the goods section to the food shipping section. And the same unscrupulous buyer will order it from their official page and get it for free. His need will be met, and the farmer will lose profit.

The risk of destruction of the business. Let's continue the example with the farmer. Farm
products are of higher quality and more expensive than those sold in large retail chains (Voronin et al., 2016). But due to the small volume of production and sales, the price of products is quite high and maintained at the level of market equilibrium. If the sales volume decreases, the farmer will have to either increase the price or reduce the quality of the product. Both can lead to the farmer's ruin or the business reorientation from organic production to mass production.

**The risk of health from bad products.** Unscrupulous entrepreneurs can use foodsharing to get rid of expired or damaged products to reduce the cost of its disposal. Manufacturers can thus get rid of low-quality products. As a result, not only the health of consumers may suffer, but also the reputation of the foodservice itself in the eyes of the population.

**Sanitary and epidemiological risks.** The production and sale of food products are strictly controlled by the state. The mechanism of legal regulation has been worked out and is functioning, but foodsharing does not fall under its scope.

**Image risks.** For some customers, the possibility of encountering a homeless person or beggar in a store or pick-up point may be the reason why they will refuse to buy. The positive effect of the "natural" and "organic" brands can thus be reset to zero.

### 4.3 RUSSIAN FEDERAL LAW

The rating system usually used by sharing services to verify suppliers and consumers also contains several threats. The profile with personal data is subject to the regulation of the Federal law of the Russian Federation No. 152-FL (FL152, 2006), according to which persons who have access to personal data are obliged not to disclose or distribute personal data to third parties without the consent of the personal data subject (FL152, 2006). The second risk is related to unfair competition. The market for agricultural products is highly competitive, and unfair marketing tricks can be used, such as leaving negative reviews and setting low ratings.

Thus, foodsharing has both advantages and disadvantages. Comparing the theoretical results of the study and Russian business practice, we concluded that this duality makes foodsharing attractive for small businesses. For large agricultural holdings, the fate of a single piece of cheese or meat is not of interest, given the scale of production, amounting to thousands of tons. For specialized retail chains (medium-sized businesses) that sell agricultural products of the same brand or from the same region, foodsharing is another unnecessary business process that does not generate profits but creates additional costs. And only for small agricultural producers, foodsharing is an expansion of the customer base (as a result of using the opportunities of the digital economy), a guarantee of product consumption (which is important when the manufacturer and seller are combined in one person), participation in charity (previously available only to representatives of medium and large businesses). At the macro level, the improvement of food processing contributes to the solution of economic, social, and environmental problems, the solution of which is one of the strategic tasks of the state.

### 5. DISCUSSION

As a result of our research, we have obtained a model of the activity of participants in foodsharing. A subject is an organization of an agro-industrial complex in the form of a small business that produces and supplies its agricultural products (food) to the free market using digital infrastructure (Internet, social networks, online banking). There is a time limit on the sale of products due to the short shelf life of products. Some products remain unsold and must be disposed of in
accordance with current legislation. The subject is under stress as a result of lost profits and the need to destroy the fruits of their labor. Thanks to the opportunities of the digital economy, the subject can partially compensate for these losses by participating in foodsharing. The model consists of a free transfer by the subject of a part of the product that he would have to destroy or sell in violation of the law because of the expiration date of the product. As a result, the entity partially compensates for its costs by refusing to recycle. Also, some consumers can evaluate the products and buy them for money the next time. Thanks to the technological capabilities of the digital economy, the act of foodsharing can take only a few days or even hours. Thanks to foodsharing, the hungry will get food, and nature will not be burdened with additional garbage.

5.1 FOODSHARING SCHEME

The causal relationships that arise as a result of the participation or non-participation of subjects in foodsharing are shown in Figure 2.

This scheme is essentially optimized as a result of the application of regulatory influence from the state. Distortions in the model are explained by the risks previously described in our work. Therefore, we need such forms and methods of regulating foodsharing that can eliminate these distortions. According to the authors, the concept of regulating foodsharing should be reduced to preserving market mechanisms for pricing agricultural products, stimulating the use of digital tools by the population, and restoring the tradition of charity among entrepreneurs.

Before offering specific forms and methods of regulation, we will establish the principles for regulating foodsharing:

- first of all, the regulatory impact must lead to a reduction in costs, otherwise the meaning of the regulation itself and the object of the regulation (foodsharing);
- the second principle of regulation - stimulating demand-complements the first principle, and in combination with it creates prerequisites for the development of small businesses;
- the principle of equality of small, medium, and large businesses means that measures that encourage the development of small businesses should not infringe on the rights of medium and large businesses. The Director of a single store of a large retail chain who wants to engage in foodsharing

![Diagram of Foodsharing Scheme](image)
must be equal to the farmer or cooperative;

- regulation of the economy of shared consumption should be implemented simultaneously with
the regulation of the digital economy (without dividing into online and offline services);

- the effectiveness of regulation is largely determined by the compliance of measures taken with
the needs of the digital economy, the efficiency of processing "big data", taking into account the
interests of consumers.

It should be noted that the authors' principled position on restricting the food-sharing activities
of large retail chains does not indicate the need for strict command measures in the economy. The
solution to the problem of recycling the remains of unsold food retail products is to optimize the
purchasing process, more accurate calculation of the volume of goods deliveries, and improve
logistics. Avoiding the very fact of the presence of unrealized products contributes more to the
preservation of the environment than any, even the most high-tech mechanism for their disposal.

5.2 OPTIMIZED FOOD SHARING MODEL

As a result of studying the built scheme, many actions were established aimed at optimizing the
model and developing foodsharing in general based on the above principles and taking into account
potential risks:

- **increasing the number of subjects of food-sharing activities** by legalizing them. The more
foodsharing participants, the higher the quantitative results of their activities, and the more public
attention they attract. Together, this increases the likelihood of those problems, the existence of which
is caused by the appearance of foodsharing;

- **improvement of the legal framework**, clarification of the legal status of subjects. Citizens
should clearly understand and have a reliable source of knowledge about what foodsharing is, who
can engage in it and under what conditions, what security guarantees exist for all participants in
the process, who can complain about violations, and so on.;

- **digital recording of all actions**, including the procedure for transferring products.
Digitalization of the economy means not only its legalization but also an increase in the openness of
information to citizens, including researchers. In a narrow sense, digital fixation is an opportunity to
check whether the product offered by a food saver is usable;

- **stimulation of food-sharing activities** of organizations of the agro-industrial complex in the
form of small businesses, including through subsidies. In this case, subsidies are not aimed at directly
supporting agricultural producers, but at preserving the environment and implementing the digital
economy's capabilities;

- **the popularization of foodsharing among users** of digital resources. The information
component is very important, and there are tools for communicating it. First of all, this is targeted
advertising in social networks;

- **forming an array of "big data" for foodsharing**. The importance of "big data" for managers,
researchers, and government officials is well known and has been studied in detail.

5.3 FOOD SHARING: GRAY ECONOMY

The problems of foodsharing cannot be eliminated by prohibitive (administrative) measures
since foodsharing itself actually belongs not to the legal “white economy,” but to the shadow “gray
economy.” Therefore, regulatory measures should be aimed not only at developing foodsharing
"from scratch", but also at legalizing existing foodsharing activities. This should be taken into
account when determining the main areas of regulation. In our opinion, these areas of regulation include support for small businesses, implementation of antitrust policy, creation of a legal framework for foodsharing, production of public goods, and development of digital infrastructure. Specific regulatory methods should be used in these areas:

- creation of a state register of food-processing entities with specific criteria, free participation and open access to the register data for all interested parties;
- monitoring feedback on the activities of food-processing entities and conducting checks on violations;
- ban on conducting food-sharing activities for large retail chains, if such activities lead to the disappearance of small businesses;
- compensation of expenses for food-processing activities provided that these activities are performed within the digital sector. This can be compensated for Internet access costs, information hosting costs, targeted advertising, etc.;
- assistance in the creation of self-regulatory food-processing entities that prepare proposals for improving the legal framework, dissemination of information about food-processing, accounting, and analysis of "big data" on food-processing. To do this, we can use the capabilities of existing business incubators.

5.4 SOLUTION TO PROBLEMS OF FOOD SHARING

In general, the problems associated with foodsharing and ways to resolve them are shown in Figure 3.

![Figure 3: Solutions to problems of foodsharing.](image)

These regulatory methods will allow us to bring foodsharing to a qualitatively new level, thereby creating additional advantages for organizations of the agro-industrial complex in the form of small businesses and contributing to the solution of a number of economic, social and environmental problems.

6. CONCLUSION

Many aspects of digital food sharing have been discussed including the advantages, participation...
process involving the online social network. The involved regulatory organizations must quickly adjust the relevant and appropriate laws to facilitate this digital food sharing scheme to benefit all the stakeholders.

7. AVAILABILITY OF DATA AND MATERIAL
Information about this study can be made available by contacting the corresponding author.

8. REFERENCES


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