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Review

Enhancing Food Security by Institutionalizing Collaborative Food Alliances in Urban Areas

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Abstract: Narrowing the food supply-demand gaps between urban and rural areas within a regional space has today become a serious challenge due to the growing urban population. Resultantly, urban markets are increasingly being dominated by industrial food chains, despite their negative socio-environmental impacts. To address this issue, this paper discusses the need and significance of 'Collaborative Food Alliances' (CFAs), which promote the direct supply of food products from rural farmers to urban residents through improved producer–consumer relationships. Based on the literature survey, this study underlines that the current CFAs are confronted with several challenges including the small scale of functioning and limited financing. While the current research on CFAs is focused on theoretical place-based studies, this paper argues that institutionalization of CFAs at a large scale is highly important for enhancing food security in urban areas. It mainly deliberates on two key aspects: (a) The process of institutionalizing CFAs and (b) A feasible financing mechanism to support CFAs. This paper emphasizes that urban local governments have a central role to play in institutionalizing CFAs, either as a lead agency or as a facilitator. It concludes with specific suggestions on three key determinants of multi-stakeholder engagement, financial constraints and policy coordination at a regional level.

Keywords: food security; urban–rural linkages; collaborative food alliances; institutionalization; multi-stakeholder engagement

1. Introduction

Rapid urbanization, booming population growth and climate change are the major factors transforming the global landscapes today. By 2014, more than 54 percent of the world's population was living in urban areas and it is projected that the percentage share will further rise to 66 percent by 2050 [1,2]. Currently, the world's urban population stands at approximately 3.5 billion and it is expected to almost double to more than 6 billion by 2050 [3]. The Global Food Policy Report 2017 [4] released by the International Food Policy Research Institute (IFPRI) pointed out that around 90 percent of the projected growth in urban population will happen only in a few selected developing countries (like China, India and Nigeria) of Africa and Asia. Consequently, the rapid urbanization trends in these developing countries and exponentially increasing urban population is expected to put unsustainable pressures on the natural environment leading to resource conflicts at a local, national and global level.

A recent report by Food and Agriculture Organization of the United Nations [5] pointed out that around 815 million people in the world today do not have secure access to food and it is matter of high concern that by 2050, the global food demands are projected to further grow by 60 percent [6,7]. Food insecurity has therefore become one of the major contemporary risks to the global community as highlighted by World Economic Forum in the 13th edition of the Global Risk Report [8].

The World Food Summit Plan of Action (1996) explained that food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life [7,9]. Evident from the current trends of urbanization [4], food demands in urban areas are increasing at a rapid pace in proportion to the growing urban population. On the other hand, agriculture production in rural areas is increasingly susceptible to climate impacts, particularly in the case of developing countries [10]. Resultantly, urban markets are increasingly dominated by industrial supply chains [4] (convenience stores, supermarkets, restaurants, street food, etc.) that pose serious concerns for public health, livelihoods and the natural environment [11–15]. In view of the growing food security concerns, sustainable food consumption in urban areas and production in rural areas has become one of the urgent issues at global level, as also emphasized in the Sustainable Development Goals 'SDGs' [16].

IFPRI [4] underlined that the emerging challenges of food security in urban areas can primarily be attributed to the worsening relationship between agricultural producers in rural areas and consumers in urban areas. For a long time, urban areas have been dependent on surrounding peri-urban and rural areas for satisfying their food demands [17]. However, the rapid urbanization trends are now influencing the traditional food supply systems in many ways including the changing consumption patterns, land degradation, industrial pollution, etc. [2,4]. Recent studies suggest that the current food systems marked with resource intensive practices have negatively affected stakeholders at both consumer and producer ends of food supply chain. While rural farmers are experiencing increasing marginalization due to growing market pressures [11,18], consumers in urban areas are progressively concerned with food quality and safety [11,19]. Clearly, the weakening links between food producers and consumers within a regional space have become a major cause of concern for both urban and rural areas.

Since urban and rural areas are closely linked through food systems, their improved coordination is increasingly important for maintaining the social and environmental balance. Accordingly, there is a growing need for environment friendly food supply schemes which encourage local production, distribution and consumption [20]. Evident from the current scientific literature, numerous such schemes are already been practiced around the world in various forms like Alternate Food Networks [21,22], Civic Food Networks [23,24], Local Food Systems [20,25], Collaborative Food Alliances [11], etc. With similarities in the form of established social networks and organizational methods, different schemes employ different ways of enhancing the producer–consumer relationships. Research has pointed out that the direct food supply schemes are confronted with several challenges including but not limited to money, land and labor that are seriously contested within food movements [20,25,26]. Since multiple actors are involved in different stages of food supply from production to consumption [2,20,21], one key challenge in localizing food systems today is to bring together various actors and encourage collaborative action. Several researchers have put forward their original work on redefining producer–consumer relationships through direct food supply schemes, however it has been pointed out that much of the research has been done on individual place-based case studies that are mostly theoretical in nature [27,28].

This study specifically focuses on direct food supply schemes referred to as 'Collaborative Food Alliances' (CFAs) (term introduced by Preiss et al. [11]). CFAs mainly build on producer–consumer relationships for food provisioning in order to enhance solidarity and loyalty between the food producers and consumers. Like other food supply schemes, Preiss et al. [11] underlined that CFAs also function informally at a small scale with limited participants and financing. Since the idea of food alliances has emerged very recently, the potential of CFAs to address food security at a large scale has not been explored so far. This paper draws lessons from existing literature and works for upscaling the practices of CFAs at a regional level. The two key objectives of the study are: (1) To understand the process of institutionalizing CFAs and (2) To develop a feasible financing mechanism to support the CFAs. It focuses on localizing food systems through CFAs in a way that all four components of food security, namely availability, accessibility, utilization and stability (defined by The World Food

Summit Plan of Action [7]), are collectively addressed by a range of actors involved in food systems. Through this study, the authors try to address the following research questions: Who are the key actors in food systems planning? What is the need and significance of CFAs? How can the practice of CFAs be institutionalized at a large scale? What are the potential sources of financing CFAs? It is important to note that this paper is mainly a literature review. In light of the limited research on stakeholder engagement in the food industry, this paper adopts an exploratory approach aimed at building a stronger foundation for future research.

The structure of the remaining paper is as follows. Section 2 provides an overview of emerging food-related concerns in urban areas and the growing need for localizing food systems from a city region perspective. By establishing the present context of weakening urban–rural linkages and producer–consumer relationships, this study highlights the need and significance of direct food supply schemes referred to as Collaborative Food Alliances (CFAs). It discusses the multi-faceted benefits gained through CFAs and its key shortcomings in the current scenario. Section 3 briefly explains the objective methodology for this study. Sections 4 and 5 form the core of this study. Section 4 explains the process of institutionalizing CFAs and underlines the need for a lead agency. It stresses the key role that could be played by urban local governments and explains two specific ways in which they can augment CFAs, as a lead agency or as a facilitator. Section 5 explains a feasible financing mechanism to support the CFAs, developed based on a thorough understanding of the current challenges. It capitalizes on various traditional and non-traditional sources of fund collection. Section 6 discusses the three key determinants of multi-stakeholder engagement, financial constraints and policy coordination for institutionalizing CFAs. The main conclusions and the limitations for this study have been briefly discussed.

2. Literature Review

This paper is mainly based on review of existing scientific research on food systems planning. For the literature review, relevant publications from selected databases of Scopus and Science Direct were identified based on keywords namely 'Food systems', 'Food Alliances', 'Food security', 'Food networks', 'Local food systems' etc. Apart from that, this review also took in consideration the online grey literature, academic research and websites related to the topic of food systems planning. By discussing the emerging concerns in food systems planning and the need for direct food supply schemes, this section lays a strong foundation for working towards institutionalization of CFAs in urban areas.

2.1. Emerging Concerns in Food Systems Planning

A food system is generally defined as the aggregate of food-related activities and the environments (political, socio-economic and natural) within which these activities take place [29]. From food producers to consumers, it involves a wide range of actors, their linked activities and resources in different phases of food supply like inputs and production, food storage and processing, transport and distribution, retail and consumption [30]. As discussed, food systems link urban and rural areas within and across a region, country and sometimes continent. The planning and management of food systems in urban areas plays an important role in shaping their peri-urban settings and surrounding rural areas where the natural environment, agricultural production, waste generation etc. is concerned [2].

Food systems planning in urban areas was rarely considered at policy and governance levels until the last decade [2,31]. However, this perception was changed after the 'global food crisis' in the year 2007–2008 wherein the prices of agricultural commodities in international markets peaked to more than double the pre-crisis levels [32]. De Schutter [32–34] explained that although the crisis was triggered by a few prominent cereal exporting countries due to weather-related events, it affected several countries around the world. Since the origin and source of the global food crisis was far beyond the administrative jurisdictions of many countries, the crisis served as an important lesson for governments around the world to rethink food provisioning at a local level [32]. It was realized that

the international markets could not be trusted to ensure a steady supply of foodstuffs at affordable prices especially in the wake of climate-based disruptions and increasing dependency on fossil fuels.

Since then, the governments around the world have taken significant steps to enhance food security, as reflected in global policy agreements like the Sustainable Development Goals 'SDGs' [16], Milan Urban Food Policy Pact [35], United Nations Decade of Action on Nutrition [36], G7's commitment to prioritizing nutrition [37], G20's emphasis on Agricultural Innovation and Sustainable Development [38] and The New Urban Agenda [39]. Irrefutably, the conceptual shift towards enhancing food security is visible in the global policy environment. However, their translation at ground level is still not apparent. In the face of growing urban population, poverty, food insecurity and malnutrition are progressively becoming urban issues all around the world [40]. The changing lifestyle trends, purchasing choices and consumption patterns in urban areas are gradually changing the way food is been produced, traded and consumed [41]. Being more organized and having higher standards [42], the industrial supply chains are slowly taking over the traditional food supply systems as they ensure a steady supply of processed food products. Urban food markets are increasingly being dominated by big retailers rather than farmers and consumers [20], as apparent from the increasing concentration of food products at the procurement level [43]. Moreover, the changing urban lifestyles associated with income growth and changing dietary preferences are socially and spatially distancing the food producers and consumers, while enhancing the transportation and distribution requirements of food products [11]. Mentioned below are a few of the key emerging concerns [3,4,7,20,22] in food systems planning:

1. Increasing conversion of productive agricultural lands in urban and peri-urban surroundings.
2. Increasing preferences for processed food products like meat, fats and oils, etc.
3. Intensive use of natural resources which generate more greenhouse gas emissions.
4. Weakening links between urban and rural areas and poor coordination at governance levels.
5. Fragmented value chains and poor access to financing system.

2.2. Need for 'City Region' Perspective

While food production is centered in rural areas, most of it is consumed by the people residing in urban areas [44]. In the wake of growing food demands, actors in both urban and rural areas are experiencing increasing marginalization and vulnerability [11]. Increasing numbers of smallholder farmers in rural areas are facing problems in integrating and conforming to the market requirements [11,45]. The growing climate uncertainties, unstable profits and poor access to financing further limit their access to urban markets [46]. On the other hand, the urban residents are increasingly concerned about the food safety and quality due to growing health problems and diseases like obesity, malnourishment, mad cow disease, avian influenza, milk and meat infections [4,5,11,20,22]. Since urban and rural systems are closely linked with food systems, addressing the growing food demands in urban areas with due consideration to the livelihoods of smallholder farmers in rural areas holds paramount importance for integrated and balanced territorial development [2]. To achieve that, it has become indispensable to address food systems in urban areas from a wider city region perspective wherein urban–rural linkages are given due consideration.

The term 'City Region Food System' was defined in a 2013 Food and Agriculture Organization consultation as the complicated relation of actors and processes related to food production, processing, marketing and consumption in a given geographical region that includes one main or smaller urban centers and surrounding peri-urban and rural areas that exchange people, goods and services across the urban–rural continuum [47]. The city region perspective helps in addressing the multi-faceted food-related challenges in urban areas by promoting urban–rural synergy at a regional level [48]. It guides the local governments in methodically addressing the growing food-related concerns in parallel to other linked sectors like transport, health, land use planning, community development, waste management, climate change adaptation and disaster risk reduction, etc. [2].

2.3. Significance of Collaborative Food Alliances

The concept of 'food alliances' emerged in 1994 when Oregon State University started a project with Washington State Department of Agriculture called The Northwest Food Alliance to develop market incentives for promoting sustainable agricultural practices [49]. Food alliances promote direct exchange of food products between urban and rural areas within a regional space. The term 'Collaborative Food Alliances' was introduced by Preiss et al. [11] in reference to such direct food supply schemes wherein urban–rural stakeholders come together to form alliances and facilitate for direct food supply between producers in rural areas and consumers in urban areas. Figure 1 explains the conceptual understanding of CFAs and highlights the key benefits of them. Noticeably, CFAs benefit urban residents by providing a secured supply of healthy food products at a fair price and the rural farmers are assured a stable income from the fixed buyers in urban areas.

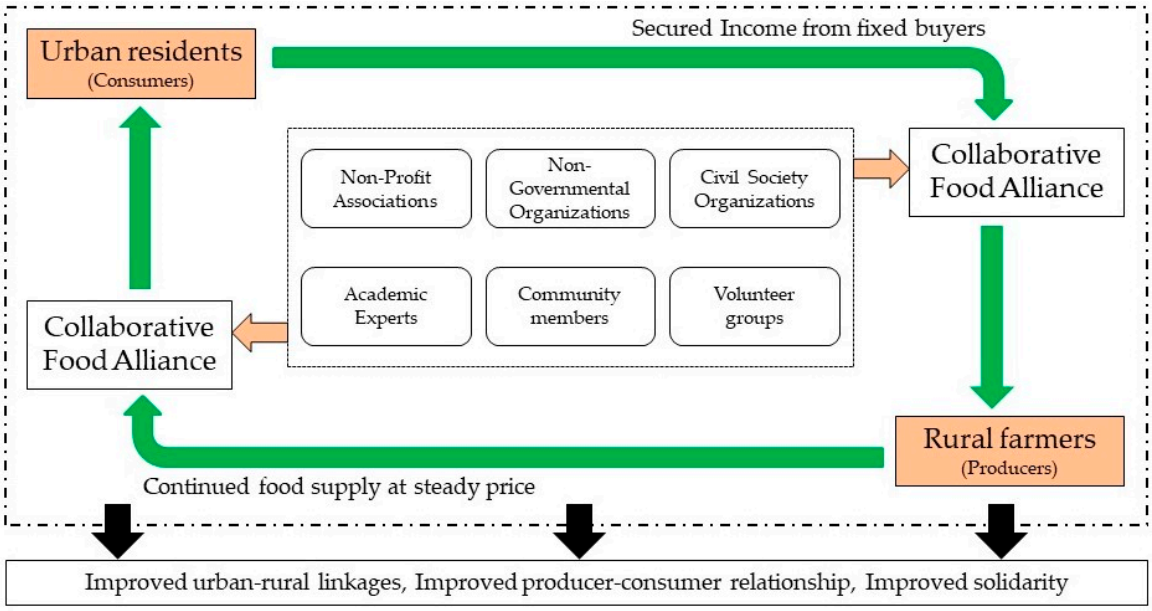

Figure 1. Conceptual understanding of Collaborative Food Alliances (Image source: Author).

Under these schemes, established groups (CFAs) build associations between urban consumers and rural farmers for the direct exchange of food products, which in the long run creates a bond of adherence and solidarity between the urban and rural stakeholders [11]. They provide steadily priced healthy food, including fruits and vegetables, with minimal transport and storage requirements, reduced transportation time, reduced food waste and greenhouse gas emissions. Most importantly, it contributes to an improved diet in urban residents, particularly the poor and marginalized ones, who are restricted to economical and less nourishing diet options. Preiss et al. [11] further explained that CFAs are different from other practices of direct food supply as they mainly build on healthy collaboration between consumers and producers (through shared meals, cultural activities, etc.). All the associated actors from urban and rural areas are required to dedicate their time, work and resources in the process of food production, supply and management. By actively engaging local communities into food systems planning, CFAs strengthen the food systems in all three dimensions of sustainability: social (through improved producer–consumer relationships and solidarity, etc.); ecological (through sustainable production methods, reduced transport, low packaging use, etc.) and economic (by providing secured income for farmers, fair price for producers, etc.) [11,50].

Preiss et al. [11] summarized several best practices of CFAs from different countries around the world. They explained the characteristics and specificities of selected cases based on eleven heuristic analytical fields namely locality, origin, supply chain, food production methods, ordering form,

delivering form, consumers, governance, legal entity, producer–consumer interaction and networks. Although the selected cases were spread around the world, they faced similar challenges in terms of limited scale, governance, legal entity and financing. It was underlined that CFAs today are functioning informally at a very small scale, wherein only a group of farmers voluntarily connect with limited urban citizens. Notably, CFAs in all cases mainly originated through consumers and there was minimal governance support. While urban residents and rural famers are fundamentally involved, the other key actors were social movements and non-governmental organizations [11].

Despite their wide-ranging benefits to human societies and the environment, CFAs are currently limited to only a small proportion of people. In the backdrop of growing food demands in urban areas, there is a need for upscaling these practices to regional levels. There is a need to enhance the number of beneficiaries by engaging a greater number of stakeholders including the private sector, local government, etc. to ensure localization of food systems from a city region perspective. CFAs can serve as a common platform for bringing together various actors involved in food systems planning. However, this could only be possible if CFAs are institutionalized and there is an enabling environment for active stakeholder engagement.

3. Methodology

Building on the literature review, this study works toward overcoming the identified shortcomings of limited scale and financial constraints in CFAs. For the purpose of institutionalizing and upscaling CFAs, the community coalition theory established by Butterfoss and Kegler [51]) has been adopted. As per the theory, the process of coalition building must be compulsorily initiated by a lead agency. While Preiss et al. [11] pointed out that the current CFAs are primarily initiated by food consumers, this study emphasizes that involving urban local governments in CFAs as a lead agency will effectively serve for upscaling these practices at a regional level. Alternatively, the local governments can facilitate the institutionalization process by providing an enabling environment for stakeholder engagement. The key concepts and categories for facilitation practices established by Papamichail et al. [52] are discussed in context of CFAs. Notably, this paper does not provide a comprehensive review of different theories of coalition building and facilitation. However, the authors have justified the reasons for selecting specific frameworks and their relevance to this study.

While the process of coalition building and facilitation lays the basis for multi-stakeholder engagement in CFAs, this study also addresses the identified key issue of financing. This study elaborates on the financial constraints in CFAs and pinpoints the potential funding sources that could be tapped for enhancing food production and management. Based on the understanding developed through this study, this paper suggests a feasible financing mechanism for supporting the CFAs in partnership with different actors involved in food systems.

4. Institutionalizing Collaborative Food Alliances

The term 'institutionalization' refers to the complicated process of implanting a new conception (for example a belief or norm) within an organization or society. Sutherland [53] explained it as a process through which new ideas and practices are introduced, accepted, used by individuals or organizations and eventually become a part of 'the norm'. As we deliberate on institutionalizing the concept of CFAs at a large scale, there is a need for different actors involved in various stages of food supply to come together, build alliances, expand their capacities and collectively focus on concerned food-related problems in the community. While improved relationships and solidarity between urban and rural areas can effectively help in localizing food systems, there is a need for institutionalizing these practices to ensure upscaling.

To institutionalize CFAs in urban areas, this study builds on the comprehensive theory of community coalitions developed by Butterfoss and Kegler [51]. This framework is selected as the basis for institutionalization as it encompasses the range of actors and guides the process of institutionalizing coalitions (alliances) in a methodical way. Feighery and Rogers [54] defined 'community coalitions' as

a specific type of coalition that comprises a group of individuals representing diverse organizations or constituencies within the community who work together to achieve a common goal. The theory leads to an organized arrangement for collaboration in which various actors work together towards a common purpose. As per the theory, the key steps to institutionalization are: (1) investigating the issues; (2) collecting required information and assessing needs; (3) developing strategic plans; (4) executing strategic plans; (5) attaining community-level results and (6) causing societal change [55]. It is important to note that the process of coalition building needs to be initiated by a lead agency (like consumers have initiated CFAs so far) in response to an opportunity, risk or mandate.

In view of the diverse actors in food systems at a regional level, the role of lead agency should necessarily be played by an organization that can mobilize different stakeholders to work together in collaborative manner. The agency should ensure that the mutual stakeholder interests across urban–rural landscapes are addressed effectively, which requires a change in governance structures at various territorial levels, investments and resource mobilization. While city and metropolitan governments around the world are increasingly involved in food systems planning and governance [2,24,25,28,56,57], their engagement in CFAs will bring in a unique added value to the institutionalization processes. By providing the required technical assistance, credibility, financial or material support and a valuable network, the urban local governments can positively help overcome the current issues in CFAs like informal food supply, legal concerns, etc., in line with local laws. Being centrally placed, the urban local governments can also ensure that the political entities within the functional region work together with the stated objectives of CFAs.

As per the comprehensive theory of community coalitions [51], the lead agency (preferably urban local governments) can initiate the process of institutionalization by employing a group of community representatives (from urban and rural areas), and providing basic support like physical space, staff persons, etc., to manage their operations. The overall process of coalition building and institutionalizing CFAs (as detailed in Figure 2) will entail three stages, namely formation, maintenance and institutionalization, which are cyclic with frequent loops back and forth. At each stage, specific factors will drive the coalition building process towards the subsequent stage. This study explains the key functions at all three stages in context of CFAs as below:

1. In the formation stage, the city governments will ensure that the main actors in food systems are brought together and they collectively recruit local representatives from urban and rural areas. The inclusion of local representatives will enhance trust and credibility of the coalition. Key leaders and selected staff members for the coalition building will then develop organizational structures and operating procedures for the CFAs. The structural divisions in the CFAs will make certain that the developed action plans adequately satisfy the core objectives of CFAs and effectively address the local food-related concerns.
2. In the maintenance stage, the CFAs shall focus on developing synergy between the defined stakeholders. Resources from various partnering members of CFAs will be pooled to execute the strategic plans. Simultaneously, the stakeholders will engage in competent assessment and planning process for food ordering, delivery, accountability, payments etc. Thereafter, the members of CFAs will become engaged in implementing the intended strategies and fostering increased levels of participation through socialization and educational events. In the implementation stage, short term outcomes of enhancing individual knowledge as well as changes in community environment will be achieved.
3. In the last stage of institutionalization, the successful strategies will result in desired outcomes at a community level. If the intended process of resource mobilization and strategy implementation effectively addresses the local needs, the coalition process will become institutionalized in the community long term. The maintenance and institutionalization stages will potentially enhance the community capacity to address food security issues.

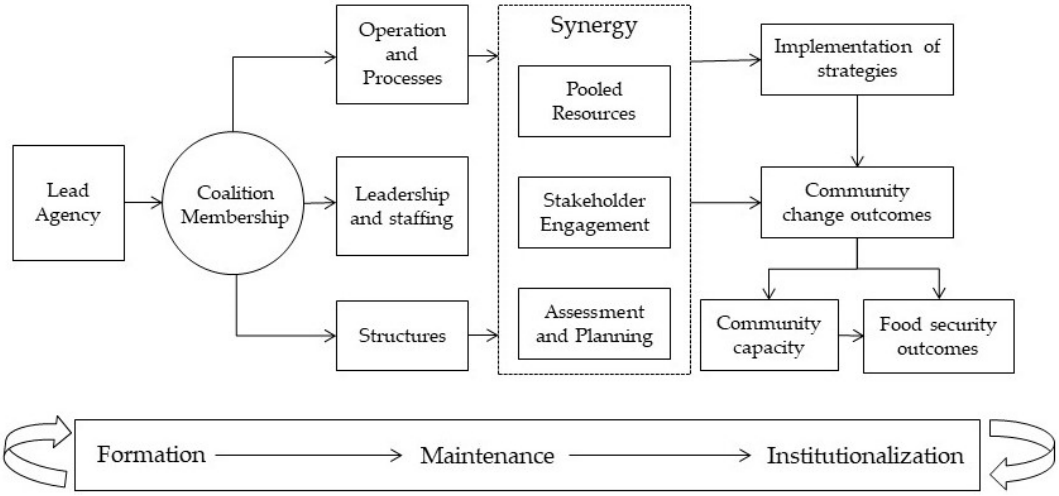

Figure 2. Process of coalition building and institutionalizing Collaborative Food Alliances (Modified from Butterfoss and Kegler [51]).

While the involvement of urban local governments is essential to scale up CFAs, they can either take the lead role in the coalition building process or can facilitate the process by guiding other stakeholders to do so. It is important to note that a facilitator doesn't offer solutions or recommend decisions, but rather helps the other stakeholders discover solutions while remaining neutral. As a facilitator, the local governments can engage with the diverse group of actors involved in food systems and ensure that the key objectives of CFAs are being achieved with due regard to all the stakeholder interests. Papamichail et al. [52] established seven key categories and concepts that are important for analyzing facilitation practices namely (1) Actors; (2) Context; (3) Content; (4) Process; (5) Outcome; (6) Approach and (7) Techniques. Figure 3 explains the characteristics of each category in the context of CFAs. These categories represent key factors that need to be considered by facilitators to ensure that the desired targets of CFAs are achieved. Although, these categories were established for addressing complex problems in a decision workshop, they have been discussed in context of CFAs as they generalize the necessary roles of facilitators very well.

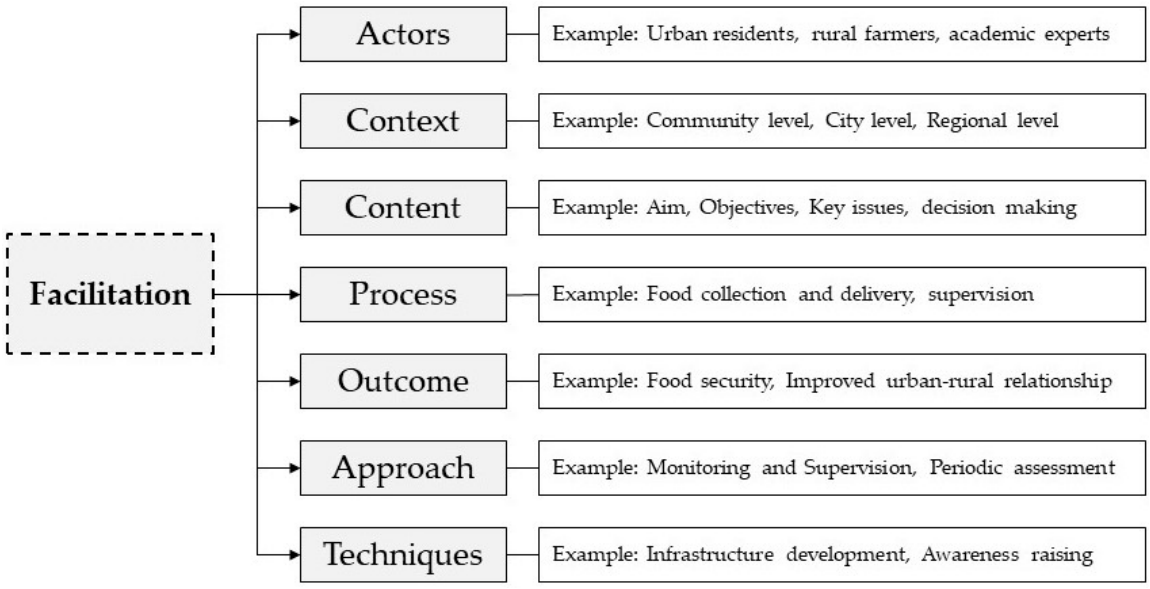

Figure 3. Key categories and concepts for facilitating Collaborative Food Alliances (Modified from Papamichail et al. [52]).

As a facilitator, the urban local governments need to first ensure that all the relevant actors in food systems including the urban residents, rural farmers, civil society organization and private sector, are brought together and their mutual interests are being given due consideration. Depending on the scale and context of CFAs (community level, city level or regional level), the government bodies need to ensure that the participating actors work in compliance with the key content of the alliance (aim, objectives, decision plan, etc.). All the actors need to essentially comply with the pre-determined process (established course of the CFA) of food supply and management in terms of food delivery, food production, monitoring, etc. To ensure that the collective efforts of all the actors lead towards the desired outcome of CFAs (food security, improved solidarity, urban–rural partnerships, etc.), the government bodies should make use of various approaches and techniques. Their approach of managing CFAs in different contexts could vary in terms of periodic assessment, progress evaluation, etc. Further, various hard and soft techniques could be employed by government bodies in facilitating CFAs like infrastructure development (hard measure) or awareness raising (soft measure). Overall, the main purpose of facilitation should be to ensure that all the stakeholders collectively work towards localizing food systems through improved producer–consumer relationships within a regional space.

5. Financing Mechanism to Support Collaborative Food Alliances

Ensuring continued food supply through CFAs for the growing urban population will be a huge challenge for smallholder farmers in rural areas unless sustainable means of financing are available for enhancing food production and management. It is important to note that 'smallholder farmers' are central to inclusive development and food security as they produce up to 80 percent of food consumed in many developing countries [46]. Smallholder farmers often lack the funds that they need to invest in their farms and businesses to improve productivity and connect to markets [46,58], and this is one of the major constraints in upscaling CFAs. To ensure long term institutionalization of CFAs, there is a need for appropriate policies and investments towards strengthening agricultural value chains and enhancing rural economies. Increased investments are needed in specific areas of agriculture development like irrigation needs of farmers, fertilizer and seed varieties, mechanization of food production, access to transport, storage and processing, etc., to enhance the capacities of smallholder farmers [46,58,59].

Food workers who harvest, process, transport, prepare and serve our daily food chain constitute the largest source of employment in the private sector in many developing countries [60]. Due to this reason, there is a high threshold for individual and small enterprises of agriculture industry to get financial support from private sector, however the current guarantee and evaluation system often restrains the smallholder farmers' access to it. The small operation scale, lack of adequate collateral value of assets, low credit rating and unstable cash flows often pose a barrier for low-income households [61]. The contemporary credit guarantee system further confines the financing for smallholder farmers and small enterprises, as mortgage and surety are two major ways of lending for small business; and business strength and business scale are the main evaluation criteria [62].

In the current scenario, financial resources for enhancing agricultural productivity are mainly provided by governments, urban based banks and foreign donor agencies in the form of subsidies, loan waivers, etc. [63]. Although a huge capital is required for the expansion of the agriculture industry, the government's budget for agricultural development is mostly limited. Thus, there is a need for higher investments from private companies to fill the pertaining gaps in agriculture development left by public funding. In that context, a wide range of non-traditional financing schemes, also referred to 'innovative financing', have emerged in the recent years that build on the partnerships between various stakeholders [7]. 'Innovative financing', as explained by Girishankar [64], refers to a variety of non-traditional financing schemes like micro-contributions, payment for environment services, incentivization, insurance schemes, credit mechanisms, taxation, public–private partnerships and market-based transactions, etc., for raising additional funds for development aid.

Building on the notion of innovative financing, this study has come up with a feasible financing mechanism (Figure 4) that builds on both traditional and non-traditional methods of fund collection. It is important to note that the suggested financing mechanism only highlights the potential sources of fund collection and the key areas of investments for institutionalizing CFAs. It does not detail the financial specifications at each stage as this could vary in different socio-economic contexts. The major stakeholders of the CFAs in the suggested financing mechanism comprise urban residents (consumers), rural farmers (producers), financial institutions, private companies and local governments (urban, rural and regional). Through the proposed financing mechanism, CFAs will procure necessary funds through private companies, local governments and urban consumers. These funds shall be utilized for enhancing food production and management, agricultural development and improving the credit ratings of rural farmers. It ensures that the participating urban residents are provided with a continuous supply of food at a steady price, while the rural farmers are assured a steady income with fixed buyers. Figure 4 visualizes the potential sources of fund collection and the key areas of investments for supporting CFAs. The major highlights of the suggested financing mechanism are as listed below:

1. The participating urban residents will deposit an annual membership fee alongside the required payments for food products and services, which will be utilized for the functioning of CFAs (manpower, space, etc.) as well as agricultural development in rural areas. In return, the participating urban residents will be assured a continuous supply of nutritious food at a steady price throughout the year.
2. The participating rural farmers, small and medium enterprises will assure a continued food supply to urban areas through CFAs. In return, they will get a secured income and an eligibility certificate for special government subsidies in agricultural equipment, machinery, etc.
3. The local governments will set up a credit enhancement fund in partnership with private companies to enhance the credit rating of the rural farmers and facilitate easy access to financial resources from lending institutions. As a complement of fund capital, the private investors shall get dividends earned through food transportation, storage, processing, etc. Further, in order to decrease the default risk of rural farmers, a fixed percentage of a farmer's income generated through CFAs will be used to pay off their loans.
4. The proposed CFAs, through means of exhibitions, workshops, seminars, field visits, etc., will provide a platform for the private companies to collaborate with urban–rural stakeholders involved in the food supply systems. In return, the participating private companies shall contribute to the joint capital (in the form of a Public–Private Partnership model) which would be utilized for agricultural development projects in rural areas (screened and initiated by institution of CFAs) including the construction of markets, logistics, green agriculture, etc.

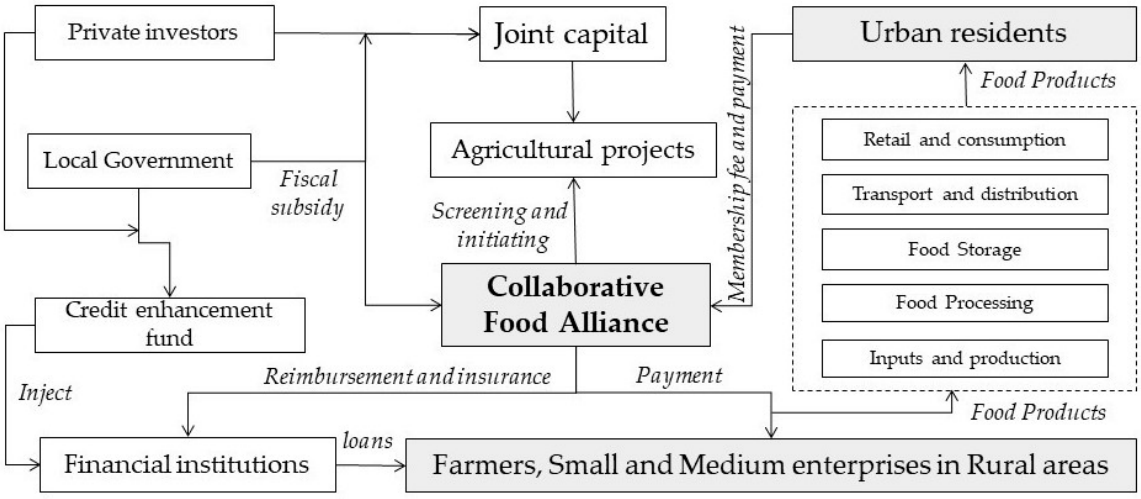

Figure 4. Feasible financing mechanism to support Collaborative Food Alliances (Image Source-Author).

6. Discussion and Conclusions

Like other direct food supply schemes, the functioning of CFAs is also restrained due to a variety of challenges including informal supply, small scale, legal constraints and financial limitations. Although the current scientific literature presents a deep understanding of various challenges pertaining to direct food supply schemes, not much work has been done towards overcoming them. Building on the literature survey, this study has addressed the two key objectives defined in the beginning of the study. The process of institutionalizing CFAs has been explained alongside a feasible financing mechanism for supporting their smooth functioning. Notably, several policy makers, practitioners, etc. around the world are increasingly involved in food policy and innovation, however to the author's knowledge, the potential of direct food supply schemes through a city region perspective has not been discussed. In that perspective, this study will serve as a theoretical contribution to the area of food security in urban areas.

Although this study has explained the process of institutionalizing CFAs, its practical implementation is a major challenge for many reasons including the changing urban lifestyles and consumption patterns. The authors suggest that there are three key factors that will determine its effective execution, namely multi-stakeholder engagement, financial constraints and policy coordination at regional level. The three factors are discussed below in the context of institutionalizing CFAs and are supported with suitable recommendations and suggestions.

6.1. Enabling Multi-Stakeholder Engagement

This study has discussed a diverse range of actors including consumers, producers, food supply chains, governments, civil society organizations, private sector, etc. To address the individual concerns and interests of numerous actors involved in food systems, the urgent need for collective actions has been realized. Collaborative engagement of diverse actors in food systems planning and management will not only enhance transparency but will also ensure accountability in resource management. In this regard, CFAs can serve as a common platform for bringing together various actors including producers, consumers, value chains, etc. under a common umbrella. The diverse actors can collaborate, build their capacities and collectively work towards the goal of food security However, the effectiveness of CFAs will be determined by the extent to which they engage all these actors and accommodate the variety of stakeholder interests, especially the poor and vulnerable population. Therefore, equal representation from various groups of society is important.

The work done by Preiss et al. [11] highlighted that CFAs currently function at a very small scale and the food supply mechanism is mostly informal. To upscale the practice of CFAs in a formal manner,

there is a need for change in institutional arrangements such that an enabling environment (policy support, resources, capacity building, etc.) is provided for multi-stakeholder engagement. Efforts should be made to institutionalize the process of dialogue between concerned actors in food systems so that CFAs get established long-term. The roles and responsibilities of various actors should be defined, and standards should be set for food ordering, delivery, accountability and payment mechanism (as explained in the process of institutionalization). Further, key emphasis should be placed on improving producer–consumer relationships and solidarity as they build the foundation of CFAs.

It has been highlighted that apart from producers and consumers, the key actors in CFAs are currently limited to civil society organizations. There is a need for involving other stakeholders like the private sector and local governments in CFAs as well so that the benefits are shared to a wider population. This study explained ways through which the private sector can positively direct investments towards food supply and management (storage, transport, processing, retailing, etc.). This study acknowledges that emphasizing private sector inclusion for financial resources will have implications for the producer–consumer relationships in urban and rural areas. However, the functioning of CFAs could be kept intact by active participation of civil society organizations such that the needs and concerns of smallholder farmers and urban consumers are always mainstreamed. Further, the involvement of local governments will provide a strong foundation for CFAs to initiate a structured dialogue at different territorial levels. The association of local governments will also ensure stakeholder participation in the CFAs and bring transparency to the food supply systems.

6.2. Overcoming the Financial Constraints

Although this study has suggested a feasible financing mechanism to support CFAs, there are certain financial constraints in both urban (affordability for poor and marginalized people) and rural areas (access to finance for smallholder farmers) that need to be considered. The capacities of smallholder farmers in rural areas, as explained in an earlier section, are highly limited due to poor access to finance. While food demands in urban areas are growing rapidly, the farmers in rural areas are struggling to conform with the market demands. Undeniably, the current urbanization trends can propel economic development at a regional level. However, the smallholder farmers in rural areas cannot benefit from it unless their production capacities are enhanced. This study pointed out that the current credit system is one of the key factors that limits their access to finance. Accordingly, efforts should be made to improve the credit system for agriculture individuals, especially farmers and small enterprises. As explained through the suggested financing mechanism, the local governments should engage with financial institutions to determine alternative arrangements for providing financial assistance to smallholder farmers and enterprises.

In urban areas, it is important to ensure that the food supplied through CFAs is affordable to the poor and marginalized population. While industrial supply chains are providing steady access to low-priced, unhealthy and less-nutritious foods that are detrimental to public health, it is important that CFAs maintain a constant supply of healthy food (such as fresh fruit and vegetables) at an affordable price. The food price could mainly be optimized through improved supply chains that encompass storage, processing, distribution, transport, retail and consumption. As the private sector mainly controls the supply chains, there is a need for developing effective ways of engaging the private sector in CFAs so that food prices could be maintained.

6.3. Ensuring Policy Coordination at a Regional Level

To rethink food supply in a sustainable manner, there is a need for integrated measures like CFAs that serve to localize food systems. CFAs offer a genuine platform to bring together urban and rural counterparts and outweigh the many shortcomings that restrict their coordinated functioning. Although food system planning is rarely considered in policy making, this study underlines the genuine need for policy interventions to ensure a structured dialogue between various actors at a regional level. By engaging diverse actors in food systems, CFAs can potentially serve as a win-win solution for

improving urban–rural linkages, enhancing food security in urban areas and also supporting rural livelihoods dependent on agriculture. However, there is a need for effective coordination between political and administrative entities across rural and urban areas. Since governance arrangements are central to trans-boundary issues like food supply, there is a need for establishing appropriate policies to drive and facilitate coordination between urban and rural areas. With the city region perspective, the governance relations at both horizontal (different sectors and actors) and vertical levels (different territorial levels) should be enhanced. Food systems planning should be considered as an essential part of other sectoral policies such as transport, community development, employment generation, waste management, climate change, etc.

Against the growing food demands in urban areas and emerging climate-induced disruptions, urban areas essentially need to be supported by strong and mutually reinforcing linkages with the surrounding rural areas that help foster an inclusive and holistic development process. Developing urban–rural food linkages will not only enhance the food security in urban areas but will also have a profound impact on other Sustainable Development Goals (SDGs), including SDG 2 that aims to eradicate hunger; and SDG 12 which pushes for responsible consumption and production of natural resources. The coordinated urban–rural development at various territorial levels will also help in achieving the objectives of The New Urban Agenda that promotes equitable growth across the urban–rural continuum.

The authors acknowledge that there are certain limitations to this study. Firstly, the research focus is narrowed only to two key specific aspects of institutionalizing and financing CFAs building on specified theories. Although there is a need to undertake a comprehensive overview of various institutionalization and facilitation methods, it falls beyond the scope of this paper. Secondly, this research is built on the understanding developed through a literature survey and the institutionalizing process of CFAs may require contextual modifications depending on the target population. Its applicability and validity in different areas needs to be tested depending on the geographic, social, economic and institutional settings. Another possible future scope for this work is determining innovative measures for stakeholder engagement in food systems planning, especially in local governments, the private sector and civil society organizations.

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