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## Empowering Agriculture: A Comprehensive Study of LGU Initiatives for Vegetable Farmers in Cebu, Philippines Amidst COVID-19

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### Abstract

This study explores the initiatives of Local Government Units (LGUs) in Cebu, Philippines, to support vegetable farmers during the COVID-19 pandemic. Through a mixed-methods approach, we assess the effectiveness of policies, financial aid, and capacity-building programs in enhancing agricultural resilience. Key findings highlight the role of LGU-driven innovations in mitigating economic disruptions and improving food security. Challenges such as resource limitations and policy gaps are also examined. The study underscores the need for sustainable, adaptive strategies to strengthen local agricultural systems against future crises.

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## Introduction

The COVID-19 pandemic has severely affected the global economy, and the agricultural sector is not exempted from its impact (Barichello, 2020; Nicola *et al.*, 2020; Kumar *et al.*, 2021). Farmers have encountered numerous challenges in marketing their products due to the restrictions and limitations imposed by the government to contain the spread of the virus (Workie *et al.*, 2020; Barman *et al.*, 2021). According to Brodeu *et al.* (2020), the pandemic triggered significant changes in economics, regional and global policies, social behavior, and citizens' mentalities.

Accordingly, the COVID-19 pandemic has been primarily triggered by population density (Kang *et al.*, 2020), the high degree of mobility of humans, mass socialization, and cultural, social, and tourism events (Prahraj *et al.*, 2020 and McCloskey *et al.*, 2020). The measures taken by most world states (governments) have addressed issues such as quarantine and isolation, more precisely, the enforced social isolation of the population along with the economic isolation between various states or regions as well as between different economic sectors (Diele-Viegas *et al.*, 2020). The lockdown has impeded the interactions among food systems incorporating every stage of food production and delivery (Butu *et al.*, 2020).

The agricultural sector is one of the most critical sectors of the Philippine economy, contributing significantly to the country's Gross Domestic Product (GDP) and providing livelihood to millions of Filipinos (Mopera, 2016). In 2020, the country's agriculture sector grew by 1.5 percent, despite the challenges posed by the pandemic (Rasul *et al.*, 2021). However, the sector's growth was not evenly distributed, with some sub-sectors experiencing declining production and marketing activities. One of the subsectors significantly affected by the pandemic is the vegetable industry, particularly those produced locally (Pan *et al.*, 2020; Apostolopoulos *et al.*, 2021). The strict implementation of quarantine protocols has resulted in the temporary closure of some markets, causing farmers to incur significant losses due to the inability to sell their produce (Weersink *et al.*, 2021; Rasul *et al.*, 2021). The pandemic has also limited the transportation of agricultural products, resulting in a lack of access to markets, and high transportation costs have further exacerbated the situation (Kumar *et al.*, 2021).

Local Government Units (LGUs) in the Philippines have three levels, namely Provincial LGU, City/Municipal LGU, and *Barangay* (village, smallest Filipino political unit) LGU, which are all under the supervision of the Department of Interior and Local Government (DILG). There are three main study sites for this study: Alcoy, Dalaguete, and Cebu City. The municipalities of Alcoy and Dalaguete are under the Cebu province; however, Cebu City is not because it is an independent city. Under the

Local Government Code of the Philippines also known as Republic Act 7160 of 1991, the Department of Agriculture (DA) together with some other government offices were devolved to the local governments. Hence, the provincial, city, and municipal LGUs have their own local agriculture office, which assists local officials in the delivery of services to the farmers.

In response to the pandemic's impact on the agricultural sector, various LGUs have implemented initiatives to assist farmers in marketing their products effectively. These initiatives include establishing direct links between farmers and consumers, facilitating the delivery of agricultural products, and providing financial assistance to farmers (Gregorioa & Ancog, 2020; Blay-Palmer *et al.*, 2021). For instance, the Department of Agriculture (DA) of the Philippines issued Memorandum Circular 9 on extending the imposition of unhampered movement of all cargoes, agriculture and fishery inputs, food products, and agribusiness personnel nationwide, especially those coming from Visayas and Mindanao to Luzon, and vice versa in response to President Rodrigo Duterte's declaration of a national state of calamity (DA-AFID, 2020; Kampman *et al.*, 2021). Consequently, the President of the Philippines signed a bill 23rd day of March 2020 on Bayanihan to Heal as One Act (RA11469) to allow local government units to access their calamity funds and purchase fresh rice directly from farmers (in some cases, at a higher price than would be found at the market).

The LGUs' response to the pandemic's impact on the agricultural sector is crucial. The industry employs a significant portion of the population and is an important food source for Filipinos (Dickella Gamaralalage *et al.*, 2020). In the province of Cebu, several LGUs have implemented strategies and practices to assist farmers in marketing their produce, ensuring their survival during the pandemic. Moreover, the Cebu Provincial Government initiated several programs to help farmers during the pandemic, such as the "Food Resiliency Program." This program aimed to provide food for residents during the pandemic while supporting local farmers. The program includes establishing "KADIWA ni Ani at Kita" outlets (literally "KADIWA of Harvest and Income"; KADIWA is an acronym of *Kabataang may Diwang Wagas* – literally "Youth with Noble Intent" – and is also a Filipino word for "fellow of the same purpose or thinking" or "one idea, one thought"), directly linking farmers to consumers by providing a venue to sell their produce (Quintana *et al.*, 2021). The Alcoy Municipal Government has also initiated the "Buy Local, Eat Local" program, which promotes the consumption of locally produced agricultural products. This program includes establishing an online platform where farmers can directly sell their products to consumers, eliminating the need for intermediaries.

While these initiatives have been successful in assisting farmers in marketing their produce during the pandemic, there is a need to assess

their effectiveness and identify best practices. This research aims to provide insights into the strategies and techniques LGUs use to assist farmers in marketing their produce during the pandemic. Specifically, this research seeks to identify the marketing strategies adopted and used by farmers and middlemen or resellers to sell their products during the pandemic, assess the effectiveness of the marketing strategies adopted and used by farmers and middlemen/resellers to market their products, and document and assess the best practices in terms of LGU assistance in agricultural marketing during the pandemic.

## 1. Background

### *Study Sites*

The project was conducted in three selected areas: Nug-as, Alcoy, Mantalongon, Dalaguete, and Sudlon, Cebu City. Most cabbages, pechay, and spring onions are produced in these areas. Likewise, interviews of middlemen/resellers and consumers will be conducted in 15 randomly selected cities/municipalities of the province.

According to the Philippine Statistics Authority, the total production of major vegetables and root crops for the 2024 first semester in the province of Cebu was recorded at 18,426.75 metric tons. This is a 9.73% increase compared to the previous year, with vegetables such as cabbage experiencing a 150.67% increase from the previous year. Overall, vegetable and root crop production in the province of Cebu accounts for 23.08% of volume of production of other crops (PSA, 2024). The three aforementioned areas are among the largest vegetable producing areas in the province of Cebu, making these locations ideal study sites for this paper.

### *Nug-as, Alcoy*

Nug-as is a *barangay* in the municipality of Alcoy, located approximately 105 km southeast of Cebu City. The *barangay* has a vegetable landing area with market days every Tuesday, Wednesday, Friday, and Saturday. While Nug-as hosts the largest patch of natural forest in Cebu, it also has farm areas planted with cabbage, pechay, and spring onions, among other vegetables. Similar crops are also grown in its surrounding *barangays*. Before the pandemic, middlemen from Dumaguete City and other places in Negros regularly came to Nug-as to buy in bulk vegetables since it became a little cheaper than if they buy their supplies in Cebu City plus, it is also more convenient for them to transport at a shorter distance via the ports of Bato

(Samboan, Cebu) to Tampi (Negros Oriental) and Tangil (Dumanjug, Cebu) to Guihulngan City (Negros Oriental).

### *Mantalongon, Dalaguete*

Mantalongon (Dalaguete) is probably one of the most known places in the mountain *barangays* of Cebu. It is known as Cebu's summer capital and vegetable basket because of its cooler environment. The area is about 700 meters above sea level and is about 95 km southeast of Cebu City. Dalaguete and Alcoy are adjacent municipalities, and Mantalongon and Nug-as are less than 10 km away. For many years, truckloads of vegetables have been hauled from Mantalongon daily and brought to Cebu City's Carbon Market, where vegetables are redistributed to supermarkets, various municipalities, and even in the provinces of Leyte, Negros Oriental, Bohol, and other small islands. Lately, traders from Negros also directly come to the area to buy bulk volumes of vegetables, similar to what is happening in Nug-as. Cabbage, pechay, and spring onions are commonly produced in Mantalongon and neighboring *barangays*.

### *Sudlon, Cebu City*

Sudlon is one of the many *barangays* in the mountains of Cebu City. It is also known for growing vegetables. Among the crops they grow are cabbage, pechay, and spring onions, although not as much as those produced in Nug-as and Mantalongon.

## **2. Materials and methods**

### *Research Design & Participant Selection*

This study employed a qualitative research design with a mixed-methods approach to document and assess the best practices of Local Government Units (LGUs) in supporting agricultural marketing during the COVID-19 pandemic. The primary data collection method was Key Informant Interviews (KII) conducted with people who were directly involved in the planning and execution of agricultural assistance programs. Primary respondents for KII included provincial, city/municipal, and *barangay* officials. Respondents at the provincial level include the governor or his/her representative, the provincial agriculturist (one from LGU and the other from the Department of Agriculture) and the chairman of the Agriculture Committee at the Provincial Board. Representatives from cities/municipalities

include the city/municipal mayor or his/her representative, the city/municipal agriculturist, committee chair on agriculture at the city/municipal council, market administrator and representative from the Philippine National Police. Lastly, the *barangay* captain, committee chair on agriculture at the *barangay* council and a *tanod* (*barangay*-level law enforcement officer) representative will also represent the *barangay*. In addition to KIIs, several Focus Group Discussions (FGDs) and supplementary interviews were conducted with other LGU personnel to validate and expand on the insights gathered from the primary informants. Notably, the responses from these additional participants were largely consistent with those provided by the key informants, further supporting the reliability of the information obtained.

The interviews were conducted without a formal, structured questionnaire. Instead, the conversations were guided by a single, central research objective: to document and assess the best practices implemented by LGUs to ensure effective agricultural marketing for farmers during the pandemic despite movement and market restrictions. Interviewers were instructed to focus discussions around actual LGU-led marketing interventions and their perceived effectiveness, allowing respondents to freely share relevant experiences and insights. This flexible approach enabled the collection of detailed, context-specific narratives that reflected the unique strategies and conditions of each locality.

FGD allow researchers to gain insights into the extent of agreement between participants (Barbour, 2018; Morgan & Krueger, 1993). This method helps understand not just individual views but also how those views converge or diverge within a group, providing a richer understanding of collective perspectives. It also compels participants to articulate and justify their perspectives to each other (Geampana *et al.*, 2024; Morgan, 1996, 2018). This interactive nature makes researchers characterize them as “active social experiments” where the dynamics of power become apparent through the participants’ interactions (Geampana *et al.*, 2024; Demant, 2012). On the other hand, KIIs are particularly strong at capturing the surrounding context and subtle details of a topic, as highlighted by GeoPoll (2024). They delve deeper into “why” and “how” trends emerge, moving beyond surface-level observations. Similarly, Brown (2021) notes that KIIs offer extra insight, either by building on survey data or by enriching existing literature on a subject.

FGDs and KIIs were employed to gather insights from Local Government Units (LGUs). Notably, a principle of voluntary participation was maintained, thereby refraining from coercion for respondents unwilling to participate in the study. The FGD method facilitated data collection at the *barangay* level, while the KII method was employed to gather insights from stakeholders at the municipal/city and provincial levels. Participants in the FGD sessions

included the *barangay* captain, councilors, and other key officials, collectively engaging in discussions that lasted approximately 45 minutes per session. Notably, a single session was conducted per *barangay* to ensure data quality.

In line with enhancing the robustness of the research, the triangulation method proposed by Carter *et al.* (2014) was implemented. This entailed conducting interviews with vegetable farmers and traders from Nug-as, Mantalongon, and Sudlon, which served to validate and augment the data garnered from FGD and KII methodologies (Lambert *et al.*, 2008). Furthermore, all interactions adhered to the minimum health protocols stipulated by the Inter-Agency Task Force (IATF). In addition, the flexibility of online discussions was extended to respondents if deemed preferable.

### *Data Analysis*

All interviews and focus group discussions were recorded then transcribed and reviewed to identify common themes and patterns. The research team used thematic analysis to interpret the qualitative data, focusing on the key areas outlined in the study's objective, specifically, the types of interventions provided by LGUs and their perceived effectiveness. Responses were grouped according to the level of LGU (provincial, municipal/city, and *barangay*), and recurring practices and strategies were identified. The team also took note of unique or innovative approaches mentioned by specific LGUs. These insights were then synthesized to form the narrative findings presented in the results and discussion sections.

### *Theoretical Framework*

This study is anchored in the Developmental State perspective, a theory which posits that government institutions, when properly motivated and equipped, play a proactive role in shaping economic development and market outcomes (Woo-Cummings, 1999). Traditionally associated with East Asian economic growth models, this perspective highlights the importance of state-led coordination in mobilizing resources, guiding investment, and correcting market failures. Rather than leaving development solely to market forces or private actors, the developmental state actively intervenes to steer sectors of national interest, especially agriculture and industry, toward long-term transformation.

In the Philippine context, this perspective is applied at the subnational level by examining how Local Government Units (LGUs) function as decentralized instruments of the national government. Under the Local Government Code of 1991, LGUs are granted fiscal and administrative

autonomy to implement locally responsive programs. Within the framework of a developmental state, LGUs have the potential to act as agents of rural transformation, particularly during crises such as the COVID-19 pandemic, when national systems are strained, and localized innovation becomes necessary.

However, consistent with critiques of decentralization and adaptive governance (Turner *et al.*, 2013), this study also recognizes the institutional constraints that LGUs face. These include uneven capacity, limited coordination with national agencies, and short-term project funding, all of which may hinder their ability to consistently deliver developmental outcomes. The study uses this framework to assess not only the LGUs' interventions but also the structural and institutional enablers and barriers that affect their ability to fulfill a developmental role in agricultural marketing and support.

### *Analytical Framework*

This study follows the analytical framework presented in Figure 1 below which focuses on evaluating LGU interventions in the context of local agriculture, specifically vegetable production and marketing. The framework analyzes interventions at different administrative levels, including provincial, municipal, and *barangay* levels, and assesses their effects on various aspects such as value chains and gender roles.

*Figure 1 - Analytical Framework*

| LGU   | Approach  | Context/<br>Circumstances   | Effect/Impact   |
|---|---|---|---|
| Provincial Level<br>Municipal Level<br>Barangay Level | <ul style="list-style-type: none"><li>• Direct interventions (market day)</li><li>• Indirect interventions</li><li>• Characterization of the various approaches</li><li>• Role of men and women in the production and marketing of vegetables</li></ul> | Examination of local conditions as well as dynamics which led to the choice of the approach | <p>Value Chain</p> <ul style="list-style-type: none"><li>• Production</li><li>• Processing</li><li>• Distribution</li><li>• Marketing</li><li>• Consumption</li></ul> <p>Gender and Development Roles</p> |

### *Approaches and Context*

LGU interventions can be categorized into direct interventions, such as organizing market days, and indirect interventions, which may involve policy changes or capacity building (Chandra *et al.*, 2017). These interventions are influenced by the local conditions and dynamics of each area, with the choice of approach often shaped by the challenges and opportunities present (Dayamba *et al.*, 2018). On the other hand, LGUs must build strong partnerships with Civil Society Organizations (CSOs) and Non-Governmental Organizations (NGOs) to effectively implement programs and services. Passing local ordinances is also essential to ensure the long-term sustainability of community development initiatives (Sanjorjo, 2025).

### *Effect and Impact*

The impacts of LGU interventions are evaluated across the entire value chain of vegetable production and marketing, encompassing production, processing, distribution, marketing, and consumption (Maghirang *et al.*, 2011). By examining each stage of the value chain, the framework aims to assess the effectiveness of interventions in enhancing market access and improving overall efficiency.

### *Gender and Roles Development*

The analytical framework places a significant emphasis on gender roles within the context of agriculture. It investigates how LGU interventions influence gender roles and whether they contribute to more equitable participation of men and women in various stages of the value chain (Behrman *et al.*, 2014). The framework recognizes the potential for interventions to impact on women's empowerment, decision-making, and access to resources, ultimately shaping the dynamics of gender roles.

### *Study Limitations*

This study offers valuable insights into the best practices implemented by LGUs to support agricultural marketing during the COVID-19 pandemic. However, several methodological and design limitations must be acknowledged. The qualitative nature of the research means that findings are context-specific and cannot be generalized across all LGUs or agricultural settings in the Philippines. The absence of quantitative measures or standardized evaluation indicators may also limit the ability to compare results across different sites or with other studies. Additionally, the absence

of a structured interview protocol may have limited consistency in the depth and scope of data collected across different respondents and locations. While the unstructured approach allowed flexibility and responsiveness to local context, it may have introduced variation in how questions were interpreted or discussed. Despite these limitations, the study contributes to a deeper understanding of local governance strategies in times of crisis and offers a practical basis for future research and policy interventions.

### 3. Results

#### *Issuance of Quarantine Pass*

The travel restrictions implemented due to the coronavirus have paralyzed the movement of people including the goods from the point sources to the market. These restrictions resulted in disruptions in the transport of goods in the market, thereby resulting in a distorted marketing channel. The worst affected were perishable farm products like vegetables, which led to huge losses on the part of the farmers. The lack of a market discouraged farmers from harvesting their vegetables. Vegetables were often left to overmatured and eventually rot on the farm or not being taken care of as fertilizer and chemical applications will only add to their production costs and eventually losses. To alleviate the situation, local government units initiated actions to assist their farmers. The issuance of quarantine passes was done at all levels of the LGU. It was commonly practiced that in a household, only one member is allowed to go out to buy their needs. Moreover, in support of those involved in transporting commercial goods including the transport of vegetables, a quarantine pass is also issued. Provinces, highly urbanized cities, and independent component cities have their travel policies (Orozco *et al.*, 2023).

There was coordination between LGUs in the province where usually the municipalities along the route, usually from Mantalongon, Nug-as, and Sudlon vegetable dealers were allowed to pass entry in every town before reaching Cebu City to bring farm produce and on returning home. However, travel was not convenient because everyone had to adhere to the required protocols. Nevertheless, the issuance of travel passes helped greatly in the transport of vegetables from the farms to the market.

Moreover, in Cebu, Philippines, public behavior on traveling during the height of the pandemic changed into something that is driven to buy goods that are essential for the households (Mayo *et al.*, 2021). This behavior could be influenced by fears of contracting the virus. To help mitigate these problems, Local Government Unit (LGU) from the *barangay*, municipal, and regional levels have initiated various interventions.

### *A. Barangay Interventions*

#### *Mantalongon, Dalaguete*

Proactive interventions were undertaken at the *barangay* (village, smallest Filipino political unit) level to address the challenges posed by the pandemic. Engr. Expeditas Lenares, head of the Municipal Agricultural and Natural Resources of Dalaguete Cebu, highlighted that innovative approaches were implemented to support both local farmers and residents. One notable initiative involved the creation of food delivery programs, mirroring those at the municipal level. This strategy aimed to avoid overcrowding in markets and facilitate convenient access to essential commodities for residents. Local farmers played a crucial role, as their produce was purchased and combined with essential goods, forming the core of these food packages. Rolling stores were set up in various *barangays*, providing a mobile distribution network that was communicated through both the Municipal Facebook (FB) page and *barangay* councils. This approach effectively promoted farmers' products, supported local businesses, and ensured that residents could access essential goods while adhering to safety measures.

Additionally, the *barangay* level also witnessed the establishment of community-oriented initiatives. An example is the community pantry organized by the *Sangguniang Kabataan* (SK) council (youth council representing the youth in a *barangay* or village) in Mantalongon, Dalaguete. This program aimed to distribute nutritious vegetables to residents, emphasizing the significance of healthy food during challenging times. The initiative was funded through donations, which were utilized to purchase vegetables directly from farmers. These vegetables were then distributed to different areas, fostering a sense of collective support and collaboration among community members. This approach not only assisted farmers in selling their produce but also attracted buyers from other regions, generating a positive impact on local agricultural trade.

Furthermore, marketing assistance programs were implemented at the *barangay* level as well, showcasing collaborative efforts between various government organizations. These programs aimed to empower farmers by facilitating direct orders and bulk purchases of their produce. For instance, partnerships were forged to enable the procurement of vegetables from farmers for distribution to high-risk areas such as hospitals and jails. These strategic alliances encouraged farmers to join organizations and register their products, thereby expanding their market reach and creating a more resilient marketing ecosystem. The utilization of social media like Facebook and YouTube platforms played a pivotal role in announcing these programs, reflecting the adaptability of the *barangay* councils in swiftly addressing the challenges brought about by the pandemic.

### Nug-as, Alcoy

Mayor Sestoso and the Head of the Municipal Agriculture Office (MAO) emphasized the municipality's effective coordination with *barangays* to navigate the challenges of marketing vegetables during the pandemic. Recognizing that local produce met demand, the municipality capitalized on the strong role of *barangays* in facilitating adaptation. Despite the relatively minor challenges faced by farmers, proactive measures were put in place to ensure a seamless agricultural ecosystem.

Notably, certain *barangays*, such as Nug-as, experienced an oversupply of vegetables. In response, the LGU harnessed the *barangays'* potential by inviting traders to engage with surplus produce. This collaborative effort saw the MAO and the mayor coordinating with traders to streamline the purchase process. Additionally, recognizing the vital role of traders, the issuance of the Department of Agriculture (DA) passes by *barangays* alleviated logistical bottlenecks, ensuring efficient movement of goods and a balanced market.

Moreover, *barangays* played a significant role in safeguarding farmers' interests. The LGU, working in conjunction with the MAO, extended insurance coverage to protect the plant commodities of local farmers. This proactive measure highlighted the *barangays'* commitment to promoting the well-being of their agricultural communities.

### Sudlon, Cebu City

Amidst the pandemic, the central Carbon Market, which served as the main hub for vegetable trading across many municipalities in the Province of Cebu, underwent temporary closure. This disruption reverberated through the local vegetable supply chain, causing impediments in selling and purchasing transactions. Sudlon I, Cebu City, faced an oversupply of vegetables, compelling farmers to lower prices due to diminished demand. With establishments shuttered and middlemen restrained by travel limitations, selling permits, and border passes, the ability of middlemen or vegetable traders to procure vegetables from Sudlon I was curtailed. In response, the Local Government Unit (LGU) of Sudlon I partnered with the City Agriculturist to mitigate this situation.

To counteract these challenges, the Sudlon I LGU initiated several interventions. The City Hall provided complimentary transportation services, enabling farmers to transport their produce from farms to the city center. The City Agriculturist assumed the role of selling these commodities and disbursing payments directly to farmers at equitable rates. This marked a departure from the pre-pandemic landscape, where middlemen dictated prices under the *Pakyaw* system – a wholesale model involving negotiated

bulk purchases from farmers. However, this arrangement encountered setbacks due to the aftermath of typhoon Odette, leading to crop spoilage.

To navigate these complex circumstances, concerted efforts emerged. The National Irrigation Administration (NIA) and the Municipal Agricultural Office (MAO) of Cebu City joined forces with diverse organizations and institutions as potential consumers of agricultural produce. This partnership paved the way for farmers from Sudlon I to supply vegetables to these agencies, diversifying their markets. Meanwhile, in Sudlon II, farmers encountered distribution challenges. Collaborating with business traders in Cebu City, the LGU of Sudlon II enabled direct purchases from farmers, bolstered by a simple *barangay* certification requirement to cross the Sudlon II border. This proactive step catalyzed direct trade between farmers and vegetable traders from other regions.

Furthermore, the LGU adopted a flexible approach to sales regulations. Farmers were permitted to vend their produce anywhere, subject to adherence to guidelines stipulated by the IATF. This pragmatic approach facilitated trade while maintaining compliance with safety protocols. Ultimately, these multifaceted interventions alleviated marketing difficulties, showcasing the adaptability and collaboration of local governments and stakeholders in navigating unprecedented challenges.

### *B. Municipality/City Interventions*

The different local government intervention programs at the municipal level were gathered through Focus Group Discussions (FGD) and Key Informant Interviews (KII) with various municipal government officials and personnel. It was observed that farmers in the different municipalities had no awareness on the different government interventions implemented during the duration of the pandemic. Most marketing interventions conducted at the municipal-level involved delivery/transportation of farm produce, marketing assistance, bulk purchases of vegetables farmed, and regulating prices.

Despite these efforts, very few farmers noticed any marketing interventions done by the municipal government. Each municipality had differing interventions during the pandemic, with some municipalities claiming that their localities had minimal marketing problems during this period. The intervention programs implemented by municipality are explored further below.

#### *Dalaguete*

The Municipality of Dalaguete had different intervention programs that were implemented during the pandemic. During the pandemic, mobility was

severely restricted through the various guidelines and protocols implemented by the government, which resulted in farmers having difficulties in marketing their perishable commodities. To address this, the Municipality of Dalaguete implemented intervention programs aimed at providing marketing/promotional assistance, bulk purchasing of farm produce, and logistical assistance during the transport of these goods. Details of the intervention programs implemented by the Municipality of Dalaguete are shown below:

a) Rolling Store – A food delivery intervention initiated by the LGU to prevent the influx of people in the market and, at the same time help people purchase basic commodities. The intervention was implemented through close coordination with the Municipal Agriculture Office, Municipal Mayor, and the DSWD Procurement Department. In this program, the LGU purchased vegetables to farmers paired with basic commodities. Meanwhile, the LGU also invited business sectors to participate in the program. The program started during the height of the pandemic, with the schedule of visits being posted through the Municipal Facebook page or communicated to the *barangay* captain/council. At this point, the *barangay* council took over the planning as to where the rolling store will be situated for easy access of the residents in each *barangay*. Overall, 33 *barangays* were visited by the program and the program lasted for a year. The interview revealed that the farm products of farmers were sold with less hassle and paved the way for the business sectors to earn money. Additionally, the program helped residents in purchasing basic commodities during the pandemic.

b) Community Pantry/Barter System – a food bank or food service that provides aid to residents in the municipality by giving nutritious foods, specifically vegetables and binding people through giving and donating what they have. The program was initiated and led by the *Sangguniang Kabataan* (SK) council (youth council representing the youth in a *barangay* or village) in Mantalongon, Dalaguete, Cebu. The program was conducted through donations, which was used to purchase vegetables from the farmers. The purchased vegetables were then distributed to coastal areas and bartered with other basic commodities such as rice, noodles, and canned goods. The bartered products were then given to the farmers. The farmers were happy that their vegetables were sold, even though the sales were not enough to cover the production cost.

c) Online Promotion of Farm Products – The SK youth council initiated this program and was done by encouraging buyers from all other places to buy the farmers' produce. The SK council collaborated with the Cebu City Organization youth partners to help buy vegetables from farmers. The vegetables were then transported through the commissioner or to designated drop off points. The program was noted to have reduced the marketing problem.

d) *KADIWA* – *KADIWA* is an acronym of *Kabataang may Diwang Wagas* (literally “Youth with Noble Intent”) and is also a Filipino word for “fellow of the same purpose or thinking”, or “one idea, one thought” which is in consonance with the Department of Agriculture Secretary’s “New Thinking” for Agriculture paradigm. The marketing intervention titled “*KADIWA*” is a program developed in partnership with the Municipal Agriculture Office, Provincial Agriculture, and Department of Agriculture. Its primary objective is to assist farmers in marketing their farm produce during the pandemic. Under the *KADIWA* program, the Department of Agriculture directly places orders for vegetables from the farmers, working in coordination with the Municipal Agriculture Office. The program gives priority to farmers who are active members of the organization, followed by those who are not members. The purchase of vegetables is conducted once a week, providing a regular marketing opportunity for farmers. Through this program, farmers are able to sell their produce and generate income, despite the challenges brought about by the pandemic. Additionally, the *KADIWA* program also serves as a platform to encourage farmers to register or join the organization of farmers. By doing so, they can avail themselves of the benefits and support provided by the organization, further enhancing their marketing opportunities and access to resources. Overall, the *KADIWA* program plays a crucial role in facilitating the marketing process for farmers, ensuring a steady market for their produce and promoting the development of farmer organizations. This intervention supports the agricultural sector, enabling farmers to sustain their livelihoods and contribute to the local food supply chain during the pandemic.

e) Bulk Purchase of Vegetables (Provincial Capitol and Municipality of Dalaguete) – The marketing intervention involved the municipality of Dalaguete and the Provincial Capitol purchasing vegetables in bulk and distributing them to areas with a high number of COVID-19 cases. The initiative was led by the mayor of Dalaguete. The municipality of Dalaguete bought vegetables in large quantities and donated them to places such as hospitals and the jails, which were dealing with the impacts of the pandemic. This action aimed to provide nutritious food to those in need and support the healthcare system in their efforts to combat COVID-19. Similarly, the Provincial Capitol bought all the vegetables at the Mantalongon Public Market and distributed them to other municipalities. Instead of letting the vegetables go to waste or rot in the farms, they were sold to benefit other people. This approach not only prevented food waste but also allowed others to access fresh vegetables that they may have had difficulty obtaining otherwise. Overall, this marketing intervention focused on purchasing vegetables in bulk, donating them to areas with high COVID-19 cases, and distributing them to other municipalities. By doing so, it addressed the needs

of vulnerable populations, supported healthcare facilities, prevented food waste, and provided a benefit to the community.

f) *Kompra* on Wheels – *Kompra* is a Cebuano (language/dialect spoken in Cebu) term which means “to buy in bulk” or “purchase”. The marketing intervention was a community service program initiated by the SK Council in Mantalongon, Dalaguete. The primary objective of this program was to provide voluntary assistance to individuals and families in the community by purchasing necessities for them during the height of the pandemic. To spread the word about the program, the SK Council in Mantalongon utilized social media, particularly their Facebook page, to announce and promote it. They encouraged people to reach out and place orders for the commodities they needed. The SK Council members then volunteered to do the grocery shopping on behalf of the individuals or families and delivered the ordered items to them. By implementing the program, the SK Council in Mantalongon alleviated the concerns and worries of people in purchasing goods for their daily needs. The program provided a convenient and safe solution for individuals who may have been hesitant or unable to go out during the pandemic.

### *Alcoy*

Interviews with the Mayor and the Municipal Agricultural Officer (MAO) revealed that there were no significant marketing problems within the municipality during the pandemic as the local produce was sufficient to meet demand. However, in response to the minimal issues faced by farmers during the COVID-19 pandemic, the municipality implemented simple programs to adapt. There were reports of oversupply of vegetables in Nug-as, but the LGU addressed this by inviting traders to purchase the produce through the coordination of MAO or the mayor and by issuing DA passes to alleviate the burden on the traders. Additionally, the LGU worked with MAO to provide insurance coverage for the plant commodities of the farmers. Details on the intervention programs in Alcoy can be seen below:

a) DA Pass Issuance/Contact Traders from Neighboring Areas – The intervention involved the issuance of DA (Department of Agriculture) passes to traders from neighboring places at the municipal hall. These passes served as permits or gateways for the traders to travel to Nug-as, where they could purchase vegetables. The objective of this intervention was to address marketing problems related to vegetables while also providing traders with an opportunity to engage in vegetable trade during that time. By issuing the DA passes, the Municipal Mayor enabled traders from neighboring areas to access Nug-as, where vegetables were likely produced abundantly. This intervention helped to alleviate marketing challenges by facilitating

the movement of traders and creating a more efficient supply chain for vegetables. By allowing traders to purchase vegetables directly from Nug-as, the intervention likely reduced transportation costs and improved market access for both traders and vegetable producers.

b) Insurance Assistance for Farmers – The intervention program was initiated by the Municipal Agriculture Office (MAO). The primary objective of this intervention was to provide insurance assistance to farmers who experienced losses in their agricultural products due to decreased marketing opportunities. When farmers reported their losses to the MAO, the office would automatically process their insurance claims. This means that farmers who suffered from reduced marketing for their agricultural products could receive compensation through insurance coverage. The intervention aimed to mitigate the financial burden faced by farmers when their products were unable to reach the market as expected. By providing insurance assistance, the MAO sought to protect farmers against potential losses and provide them with some financial support during difficult times.

### *Cebu City*

During the pandemic, Carbon Market, which is the primary market for vegetables in many municipalities in the Province of Cebu, was temporarily closed, resulting in disruptions in vegetable selling and purchasing transactions. This led to an oversupply of vegetables in Sudlon I, Cebu City, and farmers forced to sell their produce at lower prices due to low demand. Most establishments were closed, and middlemen or vegetable traders were unable to purchase vegetables in Sudlon I due to travel restrictions, selling permits, and border passes. To address this situation, the Local Government Unit of Sudlon I sought the assistance of the City Agriculturist in distributing the farmers' produce.

Furthermore, the City Hall provided free transportation for the farmers to transport their commodities from the farm to the city hall. The City Agriculturist oversaw selling the commodities and paying the farmers in cash at a fair price. This was different from the pre-pandemic period when middlemen set the vegetable prices, and farmers had no control over them since the purchasing system in Sudlon was *Pakyaw* – a Cebuano term that means a type of wholesale purchasing system where a group of buyers purchases goods in bulk from suppliers, usually farmers, at a negotiated price. However, the marketing arrangement between farmers and the City Agriculturist was halted due to the damage caused by typhoon Odette, leading to the spoilage of vegetables. To address these challenges, the National Irrigation Administration (NIA) and Municipal Agricultural Office (MAO) of Cebu City collaborated with other organizations and institutions

as potential consumers of agricultural produce. The farmers from Sudlon I will supply vegetables to these agencies. Additionally, farmers in Sudlon II, Cebu City encountered significant marketing challenges due to distribution issues. To solve this problem, the Local Government Unit (LGU) partnered with business traders in Cebu City to purchase vegetables directly from the farmers. Only a *barangay* certification is required to enter the Sudlon II border. This initiative has led to vegetable traders from Talisay, Minglanilla, and other areas in northern Cebu buying produce directly from the farmers. Furthermore, the LGU allowed farmers to sell their produce anywhere, if they adhered to the regulations set by the IATF. This measure has helped alleviate the marketing difficulties faced by the farmers. Further details of the intervention programs are shown below:

a) Community Pantries – The intervention is an initiative established and led by private agencies, cooperatives, and foundations in Cebu City. The objective of these community pantries is to provide food items to people in need during the pandemic. The City Agriculture Office played a crucial role in connecting farmers with these cooperating agencies, foundations, and cooperatives to facilitate the marketing and distribution of farm produce. Farmers were able to transport their produce within their area, and the vegetables were already packed at the farm site. Each pack consisted of assorted vegetables that were ready for pick-up. The city government's vehicles also assisted in transporting the farm produce from the farmers to the participating agencies and foundations involved in the community pantry initiative. This program not only helped farmers in marketing their farm produce but also generated some employment opportunities for residents within the farm site. By linking farmers to the community pantries, the initiative ensured that agricultural products were efficiently disposed of and marketed, while also addressing the food needs of the community. Overall, the program fostered collaboration between farmers, agencies, and foundations to provide essential food items to those in need during the pandemic.

b) Stand Display Program – The Farm Stand Display Program is an initiative recommended and initiated by the City Agricultural Office to provide alternative ways of marketing for farmers during the pandemic. Farmers set up makeshift stands along the road within their farming areas to display and sell their farm produce. The program is carried out in collaboration with the City Agriculture Office, which facilitates direct purchasing of vegetables from the farmers' stands by traders and potential buyers. To ensure fair pricing, the City Agriculture Office provides traders with a price list of vegetables upon purchase. The prices are based on suggested retail or wholesale prices for each vegetable. By directly connecting farmers with buyers, this program helps minimize the challenges

faced in agricultural marketing, providing a convenient and accessible platform for farmers to sell their produce. The program offers a practical solution for farmers to market their products and reduces the barriers they face during the pandemic. It promotes direct engagement between farmers and buyers, benefiting both parties and ensuring a smoother flow of agricultural products to the market.

c) Satellite Market – The program initiated by the local government unit (LGU) to provide convenience to residents in purchasing daily essentials and create opportunities for farmers to market their produce more easily and affordably. The LGU, in collaboration with the *barangay* council, designates specific areas or stations within each *barangay* as satellite markets. These satellite markets operate twice a week. The program invites and allows business sectors and farmers to participate. The LGU facilitates the transportation of agricultural products to the satellite markets by offering free transport using city vehicles as delivery trucks. This ensures that farmers can bring their produce to the markets without incurring additional expenses. The Satellite Market program was implemented during the height of the pandemic and continued until it became a normalized practice. It has proven beneficial to various stakeholders. Business sectors generated income during a challenging time, farmers were provided with a convenient platform to sell their produce, and consumers benefited from the accessibility of essential goods. Overall, the program has helped create a more efficient and accessible market for both farmers and consumers. It has played a vital role in supporting local businesses, promoting agricultural marketing, and ensuring that residents have convenient access to essential products.

d) Online Selling of Agricultural Products – The program is recommended by the City Agriculture office to assist farmers in marketing their produce despite movement restrictions during lockdown. The program began with the City Agriculture office showcasing farm products on their webpage, which attracted potential buyers and generated inquiries. Farmers were then advised to engage in online selling. The program involved not only farmers but also other business sectors. Motorcycle couriers or “riders for hire” were allowed to transport and deliver the ordered vegetables and other essential items. Additionally, the City Agriculture personnel volunteered to help farmers by purchasing farm inputs and materials on their behalf, providing this service free of charge. Technicians were responsible for purchasing the required materials and delivering them to the farmers upon receiving their requests through text or chat. This intervention allowed consumers to access fresh vegetables even during lockdowns, supported farmers in marketing their produce, and ensured that agricultural activities continued despite the challenges posed by the pandemic. The online platform facilitated the

connection between farmers and buyers, providing a convenient and efficient means of selling agricultural products.

e) Expanded Sure Aid Program – The marketing intervention is a joint initiative of the Department of Agriculture, specifically the Agricultural Credit and Policy Council, aimed at assisting farmers in recovering from the impact of the pandemic through a loan scheme. The program focuses on supporting small-scale farmers who are members of the Registry System for Basic Sectors in Agriculture (RSBSA), which is a registry of farmers, fisherfolk, and farm laborers that serves as a targeting mechanism for the identification of beneficiaries for different agriculture-related programs and services of the government. To participate in the program, farmers need to meet the eligibility criteria and undergo screening and validation by the City Agriculture Office. One of the key requirements is the submission of a farm plan. Qualified farmers can borrow up to PHP 25,000.00 with no collateral, zero interest, and a repayment period of 10 years. The funds provided through the program are released through financial institutions such as Landbank, COOP Bank, LAMAC, and People's Cooperative. This financial support aims to alleviate the losses experienced by farmers during the pandemic. The Expanded Sure Aid Program has played a crucial role in providing financial assistance to farmers, particularly those who have been adversely affected by the pandemic. By offering accessible and favorable loan terms, the program seeks to support farmers in their recovery efforts and enable them to sustain their agricultural activities despite the challenges they face.

Observing the findings from data on the municipal level revealed that there is a disparity in the awareness of government interventions among farmers, in the municipality of Dalaguete. Despite various municipal-level marketing interventions, only a small percentage of farmers (4.16%) acknowledged these efforts, with bulk purchases being the most recognized intervention. However, the “Rolling Store” initiative, coordinated with various local entities, successfully facilitated the purchase of vegetables from farmers, reducing hassles and ensuring access for residents. The “Community Pantry/ Barter System” organized by the SK council provided an innovative solution, creating a network for distributing nutritious vegetables while fostering community collaboration.

The “Online Promotion of Farm Products” and “KADIWA” program demonstrated Dalaguete’s adaptability in utilizing digital platforms for marketing and building partnerships with higher-level agricultural organizations. The “Bulk Purchase of Vegetables” and “Kompra on Wheels” initiatives showcased the municipality’s commitment to social responsibility, addressing both excess supply and the needs of vulnerable populations.

In Alcoy, where oversupply was reported in Nug-as, interventions were designed to connect traders with surplus produce. The issuance of

Department of Agriculture (DA) passes facilitated the movement of traders, alleviating marketing challenges and ensuring efficient supply chains. The “Insurance Assistance for Farmers” program, initiated by the Municipal Agriculture Office (MAO), demonstrated a proactive approach to mitigating losses faced by farmers during decreased marketing opportunities.

Cebu City faced challenges with the temporary closure of Carbon Market, leading to an oversupply of vegetables in Sudlon I. However, the collaboration between the Local Government Unit (LGU) and the City Agriculturist proved crucial. Free transportation services provided by the City Hall facilitated the transport of farmers’ produce, and direct selling to farmers ensured fair prices. The collaboration with the National Irrigation Administration (NIA) and other institutions diversified markets, allowing farmers from Sudlon I and II to supply vegetables to various agencies.

The “Community Pantries” initiative, although led by private agencies, showcased the active role of the City Agriculture Office in connecting farmers with cooperatives, ensuring efficient marketing and distribution of farm produce. The “Farm Stand Display Program,” “Satellite Market,” and “Online Selling of Agricultural Products” illustrated the city’s versatile approach, providing alternative platforms for farmers to directly engage with buyers, minimizing marketing challenges. The “Expanded Sure Aid Program” demonstrated the Department of Agriculture’s commitment to supporting small-scale farmers through favorable loan schemes, aiding in their recovery from pandemic-induced losses.

### *C. Provincial Interventions*

In Cebu province, the government has implemented a range of interventions to address the challenges and struggles faced by the agricultural sector and the community. The province faced difficulties during the COVID-19 pandemic, including travel restrictions, decreased marketing opportunities, and disruptions in the food supply chain. In response, the government focused on empowering households to engage in agricultural activities, promoting self-sufficiency, and strengthening family ties. They provided financial support, infrastructure, and resources to encourage vegetable gardening and organic food production through the *SugBusog* Program. Additionally, they facilitated direct sales of agricultural products through initiatives like *KADIWA* on Wheels, minimizing intermediaries and ensuring market access for farmers. Financial assistance was also provided to farmers and other affected sectors through the Enhanced Countryside Development (ECD) Program. To ensure food security, they implemented the Bulk Purchase of Agricultural Products program, distributing vegetables

to institutions in need. Furthermore, the government facilitated the flow of essential goods and services by issuing food passes and coordinated the trading of goods through the *Bagsakan sa* South Bus Terminal program. Overall, these interventions aimed to empower the community, support farmers, promote economic growth, and ensure a stable food supply during challenging times. The details of each intervention program initiated at the provincial level are shown below:

a) *SugBusog* Program – *Sugbuanganong Busog, Lawas, ug Himsog* (Cebuano phrase, literally “Cebuano Satiety in Body and Health”, often shortened to “*SugBusog*”) – a Vegetable Gardening Project of the Province of Cebu. This marketing intervention is a program initiated by the Provincial governor in collaboration with the Department of Agriculture, Provincial Agriculturist, and LGUs of every municipality and city in Cebu province. The program aims to provide families with the opportunity to engage in productive agricultural activities at home and produce their own food. The program was conceptualized during the Enhanced Community Quarantine to encourage households to stay productive and focus on cultivating their own food instead of dwelling on the increasing COVID-19 cases. Its main objectives are to inspire family members to engage in vegetable gardening, produce organic food in their backyards, and strengthen family ties. The program initially started with four participating households through the purok system, categorized into containerized and backyard gardening (Round 1). Due to its positive impact, it was expanded to the LGU and *Barangay* Level and extended to police stations (*SugBusog sa Istasyon*) and schools (*SugBusog sa Eskwelahan*) in Round 2. *Barangays* in each municipality are encouraged to join the program, and the provincial government provides financial support. Each *barangay* receives PHP 100,000.00, with 50% allocated for nursery construction and the remaining 50% for seeds and farm inputs. Additionally, each municipality is given PHP 1,000,000.00, with 50% for municipal nursery and 50% for seeds and farm inputs. The responsibility for the program lies with the *barangay* at the purok level, while the LGU oversees the household level. The program continues to evolve, and currently, the implementation of *SugBusog sa Ospital* (literally *SugBusog* at the Hospital) is being worked on as part of Round 3. To participate, households select five specific vegetables listed in the *SugBusog* program, and during evaluation, the planted vegetables should already bear fruit. Participants are required to document their activities through photos or videos, including land preparation, seedbed preparation, transplanting, fertilization, and other gardening activities until harvest. Incentive awards are given to participating LGUs and *puroks* (informal territorial subdivisions within a *barangay*) that demonstrate outstanding commitment, with winners determined based on set criteria and rubrics. The administration of awards is categorized at different

levels, with the *barangay* being responsible for the lowest level (*purok*), the LGU for the municipal level, and the provincial capitol for the district level. Overall, the *SugBusog* Program has successfully encouraged residents to engage in agriculture, promoting self-sufficiency and ensuring an adequate food supply for families during the pandemic.

b) Enhanced Countryside Development (ECD) Program – The marketing intervention titled “Enhanced Countryside Development (ECD) Program” is an initiative spearheaded by the Provincial governor with the aim of developing the countryside to benefit farmers, fishermen, and promote food security. The program focuses on providing loans to farmers and creating linkages between the agricultural sector and financial institutions. The major banks involved in the program, collectively known as “Lender Banks”, include Landbank of the Philippines, Development Bank of the Philippines, and Veterans Bank. A Memorandum of Agreement is signed between the cooperating banks to formalize the agreement. The program offers soft loans to farmers at minimal interest rates, typically 2-3% per annum, which are to be repaid after harvest. In addition to supporting farmers, the program has expanded its assistance to other sectors affected by events such as the devastation caused by typhoon Odette. This includes support for business establishments like hotels, livestock growers, and small to medium-sized enterprises. Any entity with the capacity to repay is eligible to avail of the program. To oversee the implementation, monitoring, and review of the ECD program, an ECD Task Force was created, composed of key officials, private stakeholders, and a representative from the Lender Banks. The province’s role in the program includes providing infrastructure, post-harvest facilities, and processing centers, although these aspects are still in progress. In summary, the Enhanced Countryside Development Program has provided financial assistance to farmers and various business establishments, enabling them to continue their livelihoods and improve their economic conditions. It promotes agriculture and economic development in rural areas, contributing to food security and the well-being of the local communities.

c) Bulk Purchase of Agricultural Products – The intervention is initiated by the provincial capitol in collaboration with the Agriculture Office and local government units (LGUs) in various municipalities and cities. The program aims to assist in marketing agricultural produce from Dalaguete, Cebu. The initiative took place in July when there was an excessive supply of vegetables due to decreased marketing opportunities and travel restrictions. Provincial capitol trucks were utilized to transport the purchased vegetables to different institutions. These vegetables were donated to establishments such as hospitals and jails. Additionally, selected municipalities received a distribution of the purchased vegetables. Farmers were directly paid for their produce at the time of purchase, and the price of the vegetables was

determined based on the prevailing market price during that period. This program has not only aided farmers in marketing their produce but has also assisted other municipalities and institutions in acquiring a stable supply of vegetables and other agricultural products during the pandemic.

d) Caravan on Provincial Services – The Caravan is a program initiated by the provincial capitol, led by the provincial governor, with the aim of providing a one-stop-shop for various services required by the constituents throughout the Cebu province. This program was launched once travel restrictions were lifted and continues to be implemented. The caravan offers a range of services including health services, animal services, distribution of seeds and fertilizers, and dental services. The program brings together the heads of various provincial government offices who are present during the caravan to provide their respective services. Throughout the year, a total of 40 caravans are conducted, organized into quarters. Each quarter represents one caravan, and within a caravan, 10 districts are visited. The caravan is conducted on a district-by-district basis, and the schedule of visits is communicated to the local government units. When selecting areas for the caravan, accessibility for the participating LGUs is taken into consideration. This ensures that the services offered are conveniently accessible to the constituents.

e) *KADIWA* on Wheels – The marketing intervention titled “*KADIWA* on Wheels” is a program initiated by the Department of Agriculture (DA) in partnership with Agriculture offices and local government units (LGUs) of different municipalities. The program aims to aid farmers by facilitating the direct sale of their goods and farm produce, thereby minimizing the involvement of intermediaries. The program initially existed under the name “*KADIWA*” and was later enhanced into “*KADIWA* on Wheels”. During the initial implementation, the DA allocated space for farmers to display their products. However, with the onset of the pandemic and the implementation of travel restrictions, there was a decrease in the marketing of agricultural products. As a response, the program was enhanced, and vehicles from the Department of Agriculture were utilized to transport agricultural products directly from farmers. The Department of Agriculture established partnerships with various non-government organizations (NGOs) and LGUs for the distribution of vegetables. Some farmers also preferred to deliver their farm produce directly to the DA office. Communication regarding available farm produce was coordinated between the LGUs, Agriculture offices, and the Department of Agriculture. Farmers would inform the LGU through the Agriculture office, which would then relay the information to the Department.

f) Issuance of Food Passes – The Issuance of Food Passes was initiated by the Department of Agriculture’s marketing division to ensure the uninterrupted flow of food supply throughout the province during Enhanced

Community Quarantine. The food pass is a privilege granted to farmers, traders, suppliers, and truckers involved in procuring and delivering food products and essential commodities. It allows them to travel to and from or pass through borders during the quarantine period. Initially, the issuance of food passes was carried out physically, but gradually transitioned to the digital platform, where passes were issued online. The food passes are in the form of laminated IDs. To be eligible for a pass, individuals must be legitimate farmers or traders. The intervention aimed to address concerns about food scarcity during the quarantine period by ensuring that the supply of food continued without major disruptions. By providing food passes, the Department of Agriculture facilitated the movement of essential personnel involved in the food supply chain, enabling them to procure and deliver food products across borders.

g) *Bagsakan sa South Bus Terminal* – *Bagsakan* is a Cebuano term that means “place where goods are delivered”, while the South Bus Terminal is the largest bus terminal in the Province of Cebu. The *Bagsakan sa* South Bus Terminal was initiated by the provincial government through the Provincial Agriculture Office to facilitate the trading of goods, specifically fishery products from the North and crops from the South, during the COVID-19 pandemic. The program began in March 2020 and ended in December 2020, lasting a few months as travel restrictions were gradually lifted. Effective communication and coordination between the LGUs and the border control authorities were established to ensure smooth entry and exit of institutional traders and buyers who possessed the required permits to cross borders. Strict implementation of health protocols was observed in the area, with all traders and individuals involved in the “*Bagsakan*” activities undergoing cleaning and disinfection measures. The “*Bagsakan sa* South Bus Terminal” program specifically catered to bulk purchases, where institutional traders delivered their products and only institutional buyers were allowed to make purchases. This initiative provided people with an avenue for economic benefit despite the ongoing pandemic, and the government’s assistance was felt by providing a platform for trade and commerce to continue amidst the challenging circumstances.

Based on the findings from the provincial level, the *SugBusog* Program emerged as a flagship initiative, leveraging collaboration between the Provincial governor, the Department of Agriculture, and local government units (LGUs). It aimed to inspire households to engage in agricultural activities, promoting self-sufficiency and community resilience during the pandemic.

The program’s success lies in its structured approach, commencing with a focus on containerized and backyard gardening at the purok level, and subsequently expanding to LGU and *Barangay* Levels (*SugBusog sa*

*Istasyon* (Station) and *SugBusog sa Eskwelahan* (School)). Financial support provided to *barangays* and municipalities, coupled with the incentive awards system, fostered active participation and commitment. This kind of initiative demonstrates a sustainable model for encouraging residents to cultivate their own food, enhancing food security at the household and community levels (O'Hara & Toussaint, 2021). The Enhanced Countryside Development (ECD) Program, spearheaded by the Provincial governor, focuses on economic development in rural areas by providing soft loans to farmers and fostering linkages between the agricultural sector and financial institutions.

## Discussion

The comprehensive review of Local Government Units (LGUs) in this paper focused on three levels of LGU in the Philippines: *barangay* level, municipal/city level, and the provincial level. The study was conducted in the Province of Cebu in primarily three areas: the Municipality of Dalaguete, the Municipality of Alcoy, and Cebu City. Furthermore, the study focused on one *barangay* for each municipality/city, namely, *Barangay Mantalongon* in Dalaguete, *Barangay Nug-as* in Alcoy, and *Barangay Sudlon* in Cebu City; these three *barangays* are primarily mountainous *barangays* that produces most of the vegetables for the province. During the COVID-19 pandemic, the flow of trade was heavily disrupted, which is especially harmful for vegetable farmers due to the perishable nature of their produce. To address this, the different LGU levels instituted interventions aimed at aiding the agricultural sector.

As observed in the findings, in the *barangays* of Mantalongon, Dalaguete, Nug-as, Alcoy and Sudlon, Cebu, proactive interventions focusing on innovative approaches to support local farmers and residents are practiced by the residents. As affirmed by previous studies, food delivery programs and community-oriented initiatives like the community pantry have positive impact on local agricultural trade (Chriest & Niles, 2018). These interventions at local levels provides valuable insights into the adaptability and collaboration of LGUs and stakeholders in addressing unprecedented challenges in the agricultural sector. As Gómez-Villarino & Ruiz-Garcia, 2021 affirmed, these multifaceted interventions not only alleviated marketing difficulties but also contribute to the resilience and sustainability of the local agricultural ecosystem.

The comprehensive analysis of municipal and city-level interventions in Cebu highlights the diverse strategies employed to address the challenges faced by farmers during the pandemic. According to Qu, & Zollet (2023) and Ma & Su (2024), while there is a need for improved awareness among farmers regarding these interventions, the initiatives undertaken by local

governments showcase adaptability, collaboration, and social responsibility. These interventions not only mitigated marketing difficulties but also contributed to the resilience and sustainability of the local agricultural ecosystem (Stefanakis *et al.*, 2021).

Finally for the provincial-level interventions, initiatives like the ECD Program contributes significantly to economic growth, empowering farmers and businesses to overcome challenges induced by the pandemic (Akurugu *et al.*, 2023). Another initiative by the province of Cebu is “the Bulk Purchase of Agricultural Products program”, initiated by the provincial capitol in collaboration with Agriculture offices and LGUs, addressed the challenge of excess vegetable supply in Dalaguete. This kind of initiative, the Bulk Purchase of Agricultural Products program, only supported farmers but also ensured a stable supply of vegetables to various establishments during the pandemic (Marsden *et al.*, 2023). The provincial interventions undertaken by the Department of Agriculture and the Provincial Agriculturist Office in Cebu reflect a comprehensive and adaptive approach to the challenges posed by the COVID-19 pandemic. From initiatives encouraging household agricultural engagement to programs catalyzing economic growth and ensuring uninterrupted food supply, these interventions showcase the resilience and commitment of the local government in supporting farmers and sustaining the agricultural sector (Mishra & Saxena, 2024; Efrat, 2014).

The biggest factors affecting the growth of the Philippine agricultural sector include insufficient government support services, increasing vulnerability to typhoons, droughts, and floods, and weak links between producers and markets (Cruz, 2022). As shown in this paper, the different levels of LGU have stepped up to address several of these concerns during the COVID-19 pandemic through the many production/marketing interventions. Despite the positive impact these interventions have had on local agricultural communities, most of these interventions ceased to exist once the pandemic restrictions were lifted. It should be noted that many interventions, such as the rolling stores & community pantries, have only existed due to specific conditions/protocols present during the COVID-19 pandemic, including social distancing and travel restrictions.

This study contributes to the current literature on agricultural governance and local development by focusing on how decentralized government units in the Philippines responded to a national crisis through locally led interventions in agricultural marketing. While existing literature has examined national-level agricultural policies and market disruptions during COVID-19 (Rasul, 2021), few have explored the specific role of local governments in enabling continued market access for farmers during lockdowns. This study addresses this gap by documenting real-time responses and innovations at the

provincial, municipal, and barangay levels, using qualitative evidence drawn directly from LGU stakeholders.

The study also adds theoretical depth by applying the “Developmental State” framework to a decentralized setting. While the concept is often used to describe centralized state-led industrial transformation, this research shows how local governments – when empowered with autonomy, resources, and coordination – can act as developmental agents in their own right. This extension of the framework highlights both its potential adaptability and its limitations, especially in the presence of fragmented governance structures or capacity gaps. As such, the findings offer both empirical and theoretical insights relevant to local governance, crisis response, and rural development.

Future studies may look into the long-term effects of the interventions, especially on farmers’ income and the stability of local vegetable markets beyond the pandemic period. It would also be helpful to further examine how factors such as local leadership, availability of funds, and coordination among government agencies contribute to the overall success of agricultural marketing efforts at the community level.

## Conclusions

Considering the profound impact of the COVID-19 pandemic on the agricultural sector, specifically vegetable farming, this study rigorously examined and documented the interventions executed by Local Government Units (LGUs) in Cebu, Philippines. The exigencies posed by the pandemic mandated nimble and strategic responses to bolster farmers and sustain the vegetable industry. Our research meticulously scrutinized the diverse interventions at distinct levels of governance, spanning from the *barangay*, municipal, city, to provincial initiatives.

At the *barangay* level, proactive interventions such as food delivery programs, rolling stores, community pantries, and marketing assistance programs were set in motion. These initiatives aimed to ensure the availability of essential goods for residents while concurrently advocating for local produce and supporting farmers’ livelihoods. On the other hand, municipal and city-level interventions focused on streamlining the marketing of agricultural products through delivery and transportation strategies, marketing assistance, bulk purchases, and price regulation. These endeavors proved pivotal in upholding the uninterrupted flow of agricultural products to consumers and maintaining market stability for farmers. Moreover, the provincial interventions showcased a synergized approach designed to fortify the agricultural sector. Financial support, infrastructure development, direct sales initiatives, and food pass issuance played a critical role in incentivizing

vegetable gardening, bolstering farmers, and ensuring food security across the province. These interventions underscore the indispensable role of LGUs in mitigating the challenges presented by the pandemic, emphasizing the adaptability and collaborative spirit required to navigate uncharted territories.

Apprehending the efficacy and subtleties of these interventions holds paramount importance for policymakers and stakeholders. It furnishes invaluable insights into successful strategies and can serve as a compass for shaping future policies, thereby fortifying agricultural resilience during times of crisis. By disseminating these findings through esteemed platforms such as Scopus-indexed journals, we aspire to enrich the expansive scholarly dialogue on crisis management and agricultural sustainability, ultimately nurturing a more resilient and robust agricultural sector.

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## **Conflict of Interest**

The authors declare no conflict of interest.

## **References**

Abraham, M., & Pingali, P. (2020). Transforming smallholder agriculture to achieve the SDGs. *The role of smallholder farms in food and nutrition security*, 173-209.

Aku, A., Mshenga, P., Afari-Sefa, V., & Ochieng, J. (2018). Effect of market access provided by farmer organizations on smallholder vegetable farmer's income in Tanzania. *Cogent Food & Agriculture*, 4(1), 1560596.

Akurugu, C. A., Nyuur, R. B., & Dery, I. (2023). Non-Governmental Organizations' approaches to women's empowerment amid the COVID-19 Pandemic: Towards decolonizing development praxis in northern Ghana. *World Development Sustainability*, 100079.

Alam, G. M., & Shrestha, R. B. (2021). Promote Sustainability of Family Farming for Climate-Resilient Food Systems in South Asia. *Regional Action Plan to Implement the UNDFF for Achieving the SDGs in South Asia*, 175.

Aliyi, I., Faris, A., Ayele, A., Oljirra, A., & Bayessa, M. (2021). Profitability and market performance of smallholder vegetable production: evidence from Ethiopia. *Heliyon*, 7(9), e08008.

Apostolopoulos, N., Ratten, V., Petropoulos, D., Liargovas, P., & Anastasopoulou, E. (2021). Agri-food sector and entrepreneurship during the COVID-19 crisis: A systematic literature review and research agenda. *Strategic Change*, 30(2), 159-167.

Barbour, R. S. (2018). *Doing Focus Groups*. London: Sage, pp. 1-224.

Barichello, R. (2020). The COVID-19 pandemic: Anticipating its effects on Canada's agricultural trade. *Canadian Journal of Agricultural Economics/Revue canadienne d'agroéconomie*, 68(2), 219-224.

Barman, A., Das, R., & De, P. K. (2021). Impact of COVID-19 in food supply chain: Disruptions and recovery strategy. *Current Research in Behavioral Sciences*, 2, 100017.

Baumüller, H. (2015). Assessing the role of mobile phones in offering price information and market linkages: The case of M-Farm in Kenya. *The Electronic Journal of Information Systems in Developing Countries*, 68(1), 1-16.

Behrman, J. A., Meinzen-Dick, R., & Quisumbing, A. R. (2014). Understanding gender and culture in agriculture: the role of qualitative and quantitative approaches. *Gender in agriculture: Closing the knowledge gap*, 31-53.

Bell, D., & Jayne, M. (2010). The creative countryside: Policy and practice in the UK rural cultural economy. *Journal of rural studies*, 26(3), 209-218.

Blay-Palmer, A., Santini, G., Halliday, J., Malec, R., Carey, J., Keller, L., ... & van Veenhuizen, R. (2021). City region food systems: building resilience to COVID-19 and other shocks. *Sustainability*, 13(3), 1325.

Brown, A. (2021, September 28). *Pros and cons of key informant interviews*. Ann-Murray Brown. -- Retrieved from <https://www.annmurraybrown.com/single-post/pros-and-cons-of-key-informant-interviews>.

Butu, A., Vasiliu, C. D., Rodino, S., Brumă, I. S., Tanasa, L., & Butu, M. (2019). The process of ethnocentralizing the concept of ecological agroalimentary products for the Romanian urban consumer. *Sustainability*, 11, 6226.

Carrad, A., Aguirre-Bielschowsky, I., Reeve, B., Rose, N., & Charlton, K. (2022). Australian local government policies on creating a healthy, sustainable, and equitable food system: analysis in New South Wales and Victoria. *Australian and New Zealand Journal of Public Health*, 46(3), 332-339.

Carter, N., Bryant-Lukosius, D., DiCenso, A., Blythe, J., & Niville, A. J. (2014). The use of triangulation in research. *Oncol Nurs Forum*, 41(5), 545-7. Doi: 10.1188/14.ONF.545-547. PMD:25158659.

Chandra, A., Dargusch, P., McNamara, K. E., Caspe, A. M., & Dalabajan, D. (2017). A study of climate-smart farming practices and climate-resiliency field schools in Mindanao, the Philippines. *World Development*, 98, 214-230.

Chikuni, T., & Kilima, F. T. (2019). Smallholder farmers' market participation and mobile phone-based market information services in Lilongwe, Malawi. *The Electronic Journal of Information Systems in Developing Countries*, 85(6), e12097.

Christ, A., & Niles, M. (2018). The role of community social capital for food security following an extreme weather event. *Journal of Rural Studies*, 64, 80-90.

Cruz, D. D. A. (2022). *Future-proofing Philippine agriculture and food systems: Lessons from the COVID-19 pandemic* (UP CIDS Discussion Paper 2022-04). University of the Philippines Center for Integrative and Development Studies.

Dayamba, D. S., Ky-Dembele, C., Bayala, J., Dorward, P., Clarkson, G., Sanogo, D., ... & Zougmore, R. (2018). Assessment of the use of Participatory Integrated Climate Services for Agriculture (PICSA) approach by farmers to manage climate risk in Mali and Senegal. *Climate services*, 12, 27-35.

Dickella Gamaralalage, P. J., Maeda, T., & Gilby, S. (2020). Enhancing Capacities for Building Climate and Disaster-Resilient Cities in Asia: Case Study of Cebu, Philippines and Nonthaburi, Thailand. In: Tanaka, M., & Baba, K. (eds.), *Resilient Policies in Asian Cities*. Springer, Singapore. Doi: 1007/978-981-13-8600-8\_8.

Diele-Viegas, L., & Pereira, E. (2020). *COVID-19 and Amazonia: Sustainable alternatives for an economic collapse*. Preprints. 1, 1-20.

Dora, M., Biswas, S., Choudhary, S., Nayak, R., & Irani, Z. (2021). A system-wide interdisciplinary conceptual framework for food loss and waste mitigation strategies in the supply chain. *Industrial Marketing Management*, 93, 492-508.

Dorji, N., Yamazaki, S., & Thinley, P. (2023). How has the COVID-19 pandemic response impacted small-scale fish farmers in Bhutan?. *Aquaculture*, 562, 738781.

Dos Santos, S. F., Cardoso, R. D. C. V., Borges, Í. M. P., Almeida, A. C., Andrade, E. S., Ferreira, I. O., & do Carmo Ramos, L. (2020). Post-harvest losses of fruits and vegetables in supply centers in Salvador, Brazil: Analysis of determinants, volumes and reduction strategies. *Waste Management*, 101, 161-170.

Dutta, P., Choi, T. M., Soman, S., & Butala, R. (2020). Blockchain technology in supply chain operations: Applications, challenges and research opportunities. *Transportation research part e: Logistics and transportation review*, 142, 102067.

Efrat, Z. (2014). The object of Zionism: Architecture of statehood in Israel, 1948-1973 (Doctoral dissertation, Princeton University).

Gava, O., Ardakani, Z., Delalić, A., Azzi, N., & Bartolini, F. (2021). Agricultural cooperatives contributing to the alleviation of rural poverty. The case of Konjic (Bosnia and Herzegovina). *Journal of Rural Studies*, 82, 328-339.

Geampaña, A., & Perrotta, M. (2024). Using interview excerpts to facilitate focus group discussion. *Qualitative Research*, 25(1), 130-146. Doi: 10.1177/14687941241234283 (Original work published 2025).

GeoPoll (2024, February 2). *Key informant interviews: An in-depth guide for researchers*. -- Retrieved from <https://www.geopoll.com/blog/key-informant-interviews/>.

Gómez-Villarino, M. T., & Ruiz-García, L. (2021). Adaptive design model for the integration of urban agriculture in the sustainable development of cities. A case study in northern Spain. *Sustainable Cities and Society*, 65, 102595.

Gramzow, A., Batt, P. J., Afari-Sefa, V., Petrick, M., & Roothaert, R. (2018). Linking smallholder vegetable producers to markets-A comparison of a vegetable producer group and a contract-farming arrangement in the Lushoto District of Tanzania. *Journal of Rural Studies*, 63, 168-179.

Gregorioa, G. B., & Ancog, R. C. (2020). Assessing the impact of the COVID-19 pandemic on agricultural production in Southeast Asia: toward transformative change in agricultural food systems. *Asian Journal of Agriculture and Development*, 17(1362-2020-1097), 1-13.

Ishangulyyev, R., Kim, S., & Lee, S. H. (2019). Understanding food loss and waste – why are we losing and wasting food?. *Foods*, 8(8), 297.

Jesseca C. Sanjorjo (2025). Social Welfare and Development Capacity Status: Analysis on the Devolution Transition Plan of the Local Government Unit in Region 10. *Journal Governance and Innovation*, 1(1), 39-64. -- <https://cendikiapujudsejahtera.com/Journal/index.php/JGI/article/view/2>.

Kampman, H., Chiang, S. N., & Sawadogo, S. (2021). Household and Community Gardens Surge in the Philippines and Senegal during COVID-19: How Do Contrasting Models Speak to Different Visions for Future Food Systems?. *Gastronomica: The Journal for Food Studies*, 21(2), 47-51.

Kang, D., Choi, H., Kim, J. H., & Choi, J. (2020). Spatial epidemic dynamics of the COVID-19 outbreak in China. *International Journal of Infectious Diseases*, 94, 96-102.

Kiaya, V. (2014). Post-harvest losses and strategies to reduce them. *Technical Paper on Postharvest Losses, Action Contre la Faim (ACF)*, 25, 1-25.

Kumar, P., Singh, S. S., Pandey, A. K., Singh, R. K., Srivastava, P. K., Kumar, M., ... & Drews, M. (2021). Multi-level impacts of the COVID-19 lockdown on agricultural systems in India: The case of Uttar Pradesh. *Agricultural Systems*, 187, 103027.

Lambert, S. D., Loiselle, C. G. (2008). Combining individual interviews and focus groups to enhance data richness. *J. Adv. Nurs.*, 62(2), 228-37. Doi: 10.1111/j..1365-2648.2007.04559.x. PMID:18390435.

Lezoche, M., Hernandez, J. E., Díaz, M. D. M. E. A., Panetto, H., & Kacprzyk, J. (2020). Agri-food 4.0: A survey of the supply chains and technologies for the future agriculture. *Computers in industry*, 117, 103187.

Linh, T. N., Long, H. T., Chi, L. V., Tam, L. T., & Lebailly, P. (2019). Access to rural credit markets in developing countries, the case of Vietnam: A literature review. *Sustainability*, 11(5), 1468.

Lusterio, A. C. D., Matabang, G. R., & Singco, M. T. A. J. T. (2022). Investing in community participation for disaster recovery. In: *Investing in Disaster Risk Reduction for Resilience* (pp. 25-53). Elsevier.

Ma, X., & Su, W. (2024). Local government intervention in tourism-driven rural gentrification: Types and interpretative framework. *Tourism Management*, 100, 104828.

Maghirang, R. G., De La Cruz, R., & Villareal, R. L. (2011). How sustainable is organic agriculture in the Philippines. *Trans Nat Acad Sci & Tec (Philippines)*, 33(2), 289-321.

Mahul, O., & Stutley, C. J. (2010). *Government support to agricultural insurance: challenges and options for developing countries*. World Bank Publications.

Makate, C. (2019). Effective scaling of climate smart agriculture innovations in African smallholder agriculture: A review of approaches, policy and institutional strategy needs. *Environmental Science & Policy*, 96, 37-51.

Markelova, H., Meinzen-Dick, R., Hellin, J., & Dohrn, S. (2009). Collective action for smallholder market access. *Food Policy*, 34(1), 1-7.

Marsden, A. R., Zander, K. K., & Lassa, J. A. (2023). Smallholder Farming during COVID-19: A Systematic Review Concerning Impacts, Adaptations, Barriers, Policy, and Planning for Future Pandemics. *Land*, 12(2), 404.

Mayo, F. L., Maglasang, R. S., Moridpour, S., & Taboada, E. B. (2021). Exploring the changes in travel behavior in a developing country amidst the COVID-19 pandemic: Insights from Metro Cebu, Philippines. *Transportation Research Interdisciplinary Perspectives*, 12 Dec. 2021, 100461. Doi: 10.1016/j.trip.2021.100461.

McCloskey, B., Zumla, A., Ippolito, G., Blumberg, L., Arbon, P., Cicero, A., Endericks, T., Lim, P. L., & Borodina, M. (2020). Mass gathering events and reducing further global spread of COVID-19: A political and public health dilemma. *Lancet*, 395, 1096-1099.

Mishra, R. R., & Saxena, S. (2024). Cities and rivers: a symbiotic relationship. In: *Managing Urban Rivers* (pp. 3-24). Elsevier.

Mopera, L. E. (2016). Food loss in the food value chain: the Philippine agriculture scenario. *Journal of Developments in Sustainable Agriculture*, 11(1), 8-16.

Mutonyi, S. (2019). The effect of collective action on smallholder income and asset holdings in Kenya. *World Development Perspectives*, 14, 100099.

Nicola, M., Alsafi, Z., Sohrabi, C., Kerwan, A., Al-Jabir, A., Iosifidis, C., ... & Agha, R. (2020). The socio-economic implications of the coronavirus pandemic (COVID-19): A review. *International Journal of Surgery*, 78, 185-193.

O'Hara, S., & Toussaint, E. C. (2021). Food access in crisis: Food security and COVID-19. *Ecological Economics*, 180, 106859.

Onumah, G., Davis, J., Kleih, U., & Proctor, F. (2007). *Empowering smallholder farmers in markets: Changing agricultural marketing systems and innovative responses by producer organizations*.

Otsuka, K., & Ali, M. (2020). Strategy for the development of agro-based clusters. *World Development Perspectives*, 20, 100257.

Pan, D., Yang, J., Zhou, G., & Kong, F. (2020). The influence of COVID-19 on agricultural economy and emergency mitigation measures in China: A text mining analysis. *PloS one*, 15(10), e0241167.

Patton, Praharaj, S., & Vaidya, H. (2020). *The Urban Dimension of COVID-19 in India: COVID Outbreak and Lessons for Future Cities*. -- Available online: [https://www.researchgate.net/publication/341616744\\_The\\_urban\\_dimension\\_of\\_COVID19\\_in\\_India\\_COVID\\_Outbreak\\_and\\_Lessons\\_for\\_Future\\_Cities?channel=doi&LinkId=5ecb837492851c11a8880043&showFulltext=true](https://www.researchgate.net/publication/341616744_The_urban_dimension_of_COVID19_in_India_COVID_Outbreak_and_Lessons_for_Future_Cities?channel=doi&LinkId=5ecb837492851c11a8880043&showFulltext=true).

Philippine Statistics Authority (2024). *2024 First Semester Other Crops Situation Report in Province of Cebu*. Philippine Statistics Authority Special Release. -- <https://rss07.psa.gov.ph/system/files/attachment-dir/2024-SR22-079.pdf>.

Pokharel, K. P., Archer, D. W., & Featherstone, A. M. (2020). The impact of size and specialization on the financial performance of agricultural cooperatives. *Journal of Co-operative Organization and Management*, 8(2), 100108.

Qu, M., & Zollet, S. (2023). Neo-endogenous revitalisation: Enhancing community resilience through art tourism and rural entrepreneurship. *Journal of Rural Studies*, 97, 105-114.

Quintana, A. A., Chong, M., Cordova, M. L., & Camaro, P. J. (2021). The impact of logistics on marketing margin in the Philippine agricultural sector. *Journal of Economics, Finance and Accounting Studies*, 3(2), 300-318.

Rasul, G., Nepal, A. K., Hussain, A., Maharjan, A., Joshi, S., Lama, A., ... & Sharma, E. (2021). Socio-economic implications of COVID-19 pandemic in South Asia: Emerging risks and growing challenges. *Frontiers in Sociology*, 6, 629693.

Stefanakis, A. I., Calheiros, C. S., & Nikolaou, I. (2021). Nature-based solutions as a tool in the new circular economic model for climate change adaptation. *Circular Economy and Sustainability*, 1, 303-318.

Teruel, R. G., & Kuroda, Y. (2005). Public infrastructure and productivity growth in Philippine agriculture, 1974-2000. *Journal of Asian Economics*, 16(3), 555-576. Doi: 10.1016/j.asieco.2005.04.011.

Theriault, V., Smale, M., Haider, H., & Senaratna Sellamuttu, S. (2017). The impact of agricultural extension and roads on poverty and consumption growth in fifteen Ethiopian villages. *Food Policy*, 69, 218-230.

Turner, M., O'Donnell, M., Suh, C.-S., & Kwon, S.-H. (2013). Public sector management and the changing nature of the developmental state in Korea and Malaysia. *The Economic and Labour Relations Review*, 24(4), 481-494. Doi: 10.1177/1035304613509145.

Urban Logistic Analysis in the Commercial Area and Proposal of a Policy for Loading Unloading of Goods in Popayán City. In: *Supply Chain Management Strategies and Methodologies: Experiences from Latin America* (pp. 381-403). Cham: Springer International Publishing.

Wang, X., Shao, S., & Li, L. (2019). Agricultural inputs, urbanization, and urban-rural income disparity: Evidence from China. *China Economic Review*, 55, 67-84.

Woo-Cummings, E. (1999). *The Developmental State*. Cornell University Press.

Workie, E., Mackolil, J., Nyika, J., & Ramadas, S. (2020). Deciphering the impact of COVID-19 pandemic on food security, agriculture, and livelihoods: A review of the evidence from developing countries. *Current Research in Environmental Sustainability*, 2, 100014.

World Bank (2014). *Agricultural marketing: A review of interventions and lessons learned*. -- Retrieved from <https://openknowledge.worldbank.org/handle/10986/20219>.

Wunderlich, S. M., & Martinez, N. M. (2018). Conserving natural resources through food loss reduction: Production and consumption stages of the food supply chain. *International Soil and Water Conservation Research*, 6(4), 331-339.

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