

A scoping study of the urban
community gardening promoted by the

Philippine National Urban and Peri-urban Agriculture Banner Program (NUPAP)



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Front cover: A community-based demo garden located in a business district in Taguig, Metro Manila

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Photo 1. A vegetable garden located inside a church compound in Caloocan City, Metro Manila.

List of Abbreviations

AMAS	Agribusiness Marketing Assistance Services
ATI	Agricultural Training Institute
BAR	Bureau of Agricultural Research
BIG	Bio-intensive Gardening
BPI	Bureau of Plant Industry
CALABARZON	Cavite, Laguna, Batangas, Rizal, Quezon Region (Region IV-A)
CBO	Church-based Organization
CGA	Community Growers Association
CLSU	Central Luzon State University
CSA	Climate-Smart Agriculture
DA	Department of Agriculture
FNRI	Food and Nutrition Research Institute
FGD	Focus Group Discussion
IIRR	International Institute of Rural Reconstruction
KII	Key Informant Interview
LERC	Livelihood, Education and Rehabilitation Center
LGU	Local Government Unit
M&E	Monitoring and Evaluation
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
NCR	National Capital Region
NGA	National Government Agency
NGO	Non-Government Organization
NHA	National Housing Authority
NIRDEAP	National Integrated Research, Development and Extension Agenda and Program
NNC	National Nutrition Council
NOAH	Nationwide Operational Assessment of Hazards
NSTP	National Service Training Program
NUPAP	National Urban and Peri-urban Agriculture Banner Program

PAARFI	Philippine Agriculture and Resources Research Foundation
PhilGAP	Philippine Good Agricultural Practices
PO	People's Organization
QCU	Quezon City University
TESDA	Technical Education and Skills Development Authority
ToC	Theory of Change
UAP	Urban Agriculture Program
UPA	Urban and Peri-urban Agriculture
WorldVeg	World Vegetable Center

Summary

The promotion of urban and peri-urban agriculture (UPA) is recognized globally as an area with potential to improve food and nutrition security of urban residents. The government of the Philippines has recognized this and has implemented UPA and similar projects and programs since the 1970s. Support for these projects and programs has not been continuous. Interest in UPA was revived in 2022 with the National Urban and Peri-Urban Agriculture Banner Program (NUPAP), which was implemented by the Department of Agriculture (DA) with high-level support from the administration. The program rose in prominence during the COVID-19 when it became a cornerstone of the government's response to maintain food and nutrition security. NUPAP is unique in the international context as it is a national program that receives support from all levels of government (national and sub-national) and engages multiple stakeholders (private sector, academics, research organizations, non-government organizations and people's organizations). However, there is not a lot of documentation available that describes the program in a systematic and independent way, which is an important information gap that this study seeks to fill. Against this backdrop, this study aimed to gain a better understanding of the design and intended impacts of the NUPAP program. We chose to focus on NUPAP support for urban community gardens and commercial farms in the Metro Manila area. The study relied on a review of documents and interviews with government implementers, partners, and beneficiary communities.

Our study finds that NUPAP has supported a very large number of initiatives, often contributing to other ongoing programs such as the Department of Education's school garden program or local government programs. NUPAP provided support on demand but did not identify key vulnerable populations or urban locations that needed support. As such, it appears that most community garden initiatives already existed before support was received and many initiatives benefitted from multiple sources of support. There are numerous government and private initiatives in Metro Manila, an area that covers a population of at least 13.5 million people, and NUPAP was instrumental in coordinating across initiatives. Clear challenges remain such as the need for more collaborative and integrated efforts to support the supply of vegetable seed and seedlings, climate-resilient agriculture, credit and financing for commercial vegetable growers, and the need to improved program monitoring and evaluation.



Photo 2. Women participate in the cleaning of a vacant lot in a residential area in Quezon City that will be used as a community garden.

1 Introduction

Urban and peri-urban agriculture (UPA) is the production, processing, marketing and distribution of food and non-food products within and on the peripheries of an urban area. The UPA is an age-old practice, but the concept has become popular globally since the 1990s (FAO, Rikolto & RUAF, 2020). This attention can in part be attributed to the rising problems of food insecurity and poor nutritional status of a rapidly growing urban population globally. It is expected that by 2050, around two-thirds of the world population will live in cities (World Bank, 2017). This global trend poses challenges to the agricultural sector to meet the growing demand for safe and nutritious food from a decreasing area for food production in rural areas, climate change risks, and the recent COVID-19 pandemic.

UPA is recognized in various global development programs as one of the strategies to achieve a sustainable and resilient agrifood systems. Shorter food supply chains can potentially create a more reliable access to fresh, safe, affordable, and nutritious food while also generating other benefits such as reducing the carbon footprint of the agrifood system, creating greener urban environments, stimulating social interaction and social cohesion in densely populated urban environments, and creating jobs and income opportunities for urban dwellers.

In the Philippines, national and local institutions have recognized the benefits of UPA since the 1970s (Panganiban, personal communication 22 July 2022). The Philippine national government institutionalized UPA as a food security program in 1998 and reinvigorated it in 2020 as the National Urban and Peri-Urban Agriculture Banner Program (NUPAP). The vision of the NUPAP is *“to make food abundant in urban areas by supporting the establishment of community gardens and farms on open spaces while increasing awareness for plant, animal and human health, and inspiring youth, adults and seniors to contribute to innovative, economic and environmentally sustainable food systems towards the uplifting of Filipino communities”* (Department of Agriculture [DA], 2022). NUPAP played a key role in the government’s COVID-19 response with households supported through vegetable seed kits and small livestock. The program has received strong policy support and broad participation within and outside the DA involving all levels of government.

NUPAP involves several DA agencies and comprises a wide range of activities, including conventional community gardening, container gardening, vertical gardening, rooftop gardening, hydroponics, aquaponics, mushroom production, poultry and egg production, rabbit production, apiculture, and tissue culture. These activities were coordinated by DA national agencies and regional field offices and implemented with partners from local government units, academes and research organizations, and the private sector. The DA signed Memoranda of Understanding (MOU) with partners to formalize the collaboration.

NUPAP is unique in the international context as it shows the commitment of all levels of government and multiple stakeholders in the promotion and implementation of urban agriculture. As such, the experience of NUPAP is helpful to share with other countries facing similar urban challenges as the Philippines. However, there is not a lot of documentation available that describes the program in a systematic way, which is an important information gap that this study seeks to fill. A further rationale for this study was that NUPAP has helped thousands of households and communities to establish urban gardens, but outcomes and impacts are not well documented. In fact, in 2020, the NUPAP supported 2,367 urban community gardens across the country (DA, n.d.; DA, 2022), but it is unclear how NUPAP support has helped these communities. While this is not an impact study, the results will help shed light on the impact pathway of NUPAP and could help to design a subsequent impact evaluation.

Against this backdrop, this study aims to gain a better understanding of the program’s design and the intended impacts of the NUPAP program. We chose to focus on NUPAP support for urban community gardens and commercial farms and focusing on Metro Manila. Covering all aspects of NUPAP would be too ambitious. Within NUPAP, the term “community gardens” is used rather loosely and includes gardens established in schools, parks, housing projects, places of worship, vacant lots, factories, and private properties within urban areas.

2 Data and Methods

2.1 Study design

The study was divided into two components:

- Component 1: Understand the community garden component of NUPAP

This included a reconstruction of the program’s Theory of Change (ToC) regarding community gardens. More specifically, we asked questions such as:

- What was the identified problem that the program aimed to address? What were the underlying assumptions?
- What were the interventions?
- Who were the main target population and how were they selected into the program?

We also focused on the program implementation by asking question such as:

- Who implemented the interventions?
- Was there a clear protocol for implementation?
- What type of people were reached (women, youth, poor or food insecure), and how many? Where are they located? Do they match the target population?

Finally, we investigated the program’s M&E system to understand if there is a dedicated M&E team supporting the program, how the M&E program is organized and how is data collected and stored and what details are included.

- Component 2: Describe the likely effects on program participants

This component focused on the beneficiaries of the program. We intend to understand people’s perceptions on the program and the range of positive (and possibly negative) effects people have perceived. Key questions were:

- Are recorded beneficiaries able to confirm their participation in the program?
- What was the extent of participation (membership, decision making, access to benefits)?
- What support (inputs, services, knowledge, or advice) did they receive? When, from who and how much?
- Was there any follow up support?
- What is the perception of the participants regarding the support received?

- Where they able to implement any of the recommended changes? Did they make any other changes, perhaps not recommended by the project (e.g., applied pesticides)?
- What are the perceived impacts of the intervention? What has changed (economic, social, environmental, nutritional and health effects)?
- What is the likelihood that benefits can be sustained?

2.2 Methods

The study used qualitative research methods through key informant interviews (KII), focus group discussions (FGD), and observation. For the first component of the study, we interviewed program implementers including directors and staff members from the Bureau of Plant Industry (BPI), the Agricultural Training Institute (ATI) and Agribusiness Marketing Assistance Services (AMAS). For the second component, we interviewed partners and beneficiaries. Interviews were conducted either on-site or through an online meeting platform. We conducted 15 KIIs and 9 FGDs involving 92 participants (**Table 1**). Participants per FGD ranged from 4 to 14. Interviews and observations in each site took about two hours to complete on average. Interview notes were synthesized and analyzed. Secondary information sources, such as government documents (e.g., statutes, reports, forms) and online articles were also used.

Table 1. Summary profile of respondents

Respondents	Persons
Gender	
– Male	41
– Female	51
Participation	
– Program implementers	15
– Partners/ Coordinators	44
– Beneficiaries	31
– Others	2
Type of organization	
– National Government Agency (NGA)	18
– Local Government Unit (LGU)	15
– Universities/ Schools/ Research Centers	17
– Non-Government Organization (NGO)	6
– People’s organization (PO)/ Church-based organization (CBO)	32
– Private company	4
Total	92

The respondents were from various sectors and levels of organization, such as national government agencies (20%), local government units (16%), universities/ schools/ research centers (18%), non-government organizations (7%), people's organizations/ church-based organizations (35%), and private company (4%). Representatives from marginalized sectors, such as women, urban poor and persons with disability were part of the respondents and reported under non-government organization and people's organization.

2.3 Study site selection

NUPAP is implemented in urban and peri-urban sites across the Philippines. For this scoping study, we focused on sites within Metro Manila or the National Capital Region (NCR). Metro Manila consists of 16 cities and 1 municipality and has a population of about 13.5 million according to the 2020 national census (PSA, 2020). The study covered 7 of the 16 cities and 26 sites. Study sites were selected through purposive selection of community gardens, institutional gardens, and commercial farms from the list of initiative supported by NUPAP. Figure 1 and Table 2 show the map and information about the study site respectively.

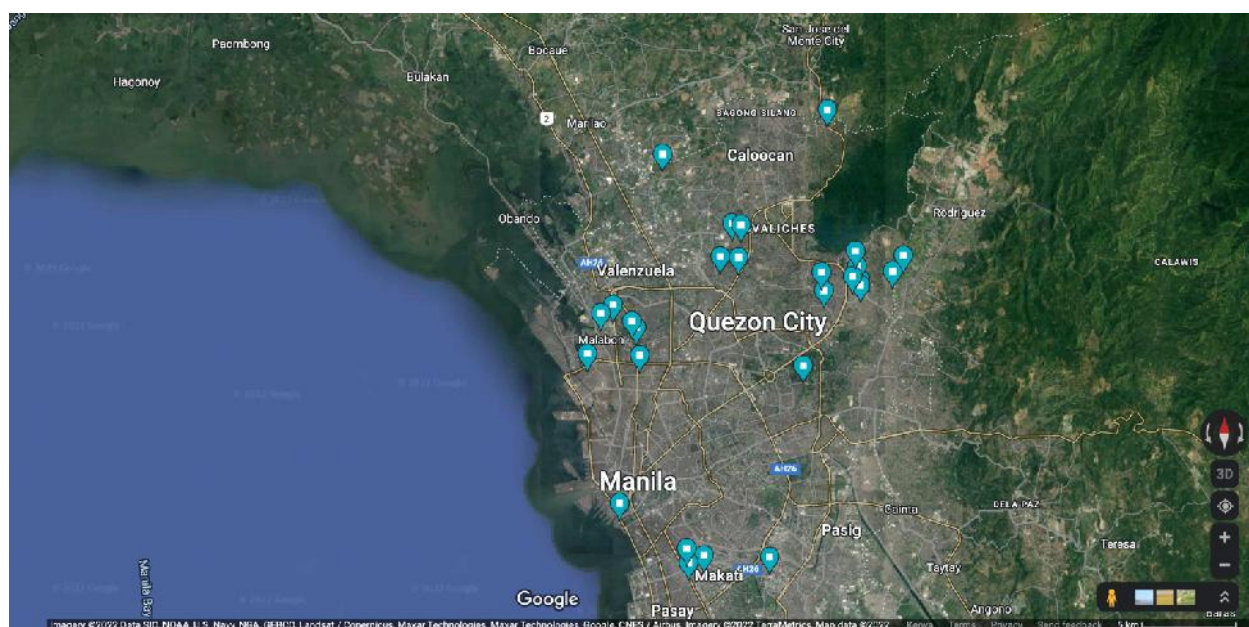


Figure 1. Location of study sites across Metro Manila (Image: Google Map 2022)

2.4 Ethics

The research study was cleared by the World Vegetable Center Institutional Biosafety and Research Ethics Committee (registration no. 2022-017). Prior to the interview, respondents were briefed about the purpose of the study, why they were selected as respondents, how the interview will be recorded, and the duration of the interview. When the respondents consented to the interview process, they were asked to sign informed consent forms. The signed forms were scanned and filed. Audio recording of the interviews and interview notes were filed.

Table 2. Profile of Study Sites

City	Area (sq km)	Barangay	Pop'n (2020)	Initiative	Type of garden	Date of visit/ interview
Caloocan	57.9	Barangay 185 (Malaria)	27,169	Livelihood, Education and Rehabilitation Center	Institutional	31 Aug 2022
		Barangay 91 (East Grace Park)	610	Project GRACE, Shrine of our Lady of Grace Parish	Institutional	7 Sep 2022
Valenzuela	46.5	Bignay	49,716	Integrated Community Food Production, Disiplina Village – Bignay	Community	30 Aug 2022
Quezon	168.6	Commonwealth	213,229	Masaganang Bukas Farmville	Community	15 Sep 2022
		Batasan Hills	166,572	San Diego Elementary School	Institutional	2 Aug 2022
				Quezon City University Demo Garden	Institutional	6 Sep 2022
				Masaganang Bukas Farmville	Community	15 Sep 2022
		Payatas	139,740	Masaganang Bukas Farmville	Community	15 Sep 2022
		Holy Spirit	111,901	Gulayan at Bulaklakan Integrated Natural Urban Farm	Institutional	26 Aug 2022
				Masaganang Bukas Farmville	Community	15 Sep 2022
		Bagong Silangan	106,886	New Greenland	Commercial	15 Sep 2022
				Masaganang Buhay Farmville	Community	15 Sep 2022
		Bagbag	64,653	Kingspoint Joy of Urban Farming	Community	26 Aug 2022
		Nagkaisang Nayon	53,781	Northwind Urban Farmers Federation Community Garden	Community	26 Aug 2022

City	Area (sq km)	Barangay	Pop'n (2020)	Initiative	Type of garden	Date of visit/ interview
		San Bartolome	51,148	Center for Urban Agriculture and Innovation	Institutional	6 Sep 2022
Quezon City (cont.)		U.P. Campus	47,127	Lakas ng Nagkakaisang Kababaihan sa Barangay U.P. Campus Community Garden	Community	7 Sep 2022
		Novaliches Proper	15,468	Sharon Farm	Community	5 Sep 2022
Malabon	16.5	Longos	55,424	Basic Ecclesiastical Community Household Garden	Community	7 Sep 2022
		Potrero	42,311	Basic Ecclesiastical Community Household Garden	Community	7 Sep 2022
		Tinajeros	18,411	Malabon Gulayan at Halamanan sa Kabahayan Project	Community	30 Aug 2022
				Basic Ecclesiastical Community Household Garden	Community	7 Sep 2022
Manila	38.8	Barangay 666 (Ermita)	810	Rizal Park Edible Landscaping Demo Garden	Institutional	31 Aug 2022
Makati	27.4	San Antonio	17,494	Dole Philippines, Inc. – Philippine Marketing Fresh Rooftop Garden	Institutional	1 Aug 2022
		San Lorenzo	14,054	Philippine Agriculture and Resource Foundation, Inc. Hydroponics Research Site (located in Planters)	Institutional	6 Sep 2022
		San Isidro	6,098	Urban Greens PH	Commercial	1 Aug 2022
Bonifacio Global City		Barangay Post Proper Northside (Makati area)	57,940	Community Garden at BGC by Urban Farmers	Institutional	2 Aug 2022

3 Results

3.1 Urban and peri-urban agriculture in the Philippines: Aims and targets

In the Philippines since the 1970s, urban agriculture, particularly community gardening, has been one of the widely recognized approaches to improving food and nutrition security. Resettlement projects in the 1970s were implemented by the national government to provide proper housing and livelihood to the growing urban poor population in Metro Manila. The International Institute of Rural Reconstruction (IIRR) partnered with the National Housing Authority (NHA) to implement Bio-Intensive Gardening (BIG) in communal areas in one of the resettlement projects in suburban Dasmariñas in Cavite Province in the mid 1980s. This project aimed to provide community access to food and livelihood (Ibus, 1992).

In the 1990s, urban agriculture was evident in a few cities in Manila such as Las Piñas, Parañaque, Pasay and Quezon City. In 1998, The Urban Agriculture Program (UAP) was institutionalized as a national program under the Office of the Presidential Assistant on Food Security in partnership with multi-sectoral organizations, including the DA. Within the DA, the program was led by the CALABARZON¹ regional field office and pilot areas were established in Barangay Holy Spirit in Quezon City and in Barangay Sto. Toribio in Lipa City (Campilan, Boncodin, De Guzman, 2000; Nitural, n.d.; Roa, 2022). UAP focused on gardening, which was implemented by households, communities, and institutions (churches, schools, cooperatives).

UAP implementers provided the following support to beneficiaries: negotiated with public and private groups for use of idle lands, provided planting materials, provided training on crop management, provided financial support, mobilized resources for needed infrastructure, and conducted program M&E. From 1998 to 2000, UAP covered 129,409 sqm of space converted to urban agriculture, and supported 1,596 participants, including households, employees, and students. Universities and research organizations contributed research and innovation, and extension services, such as needs assessments, demonstration on “receptacle farming” (an intervention promoted by the Central Luzon State University (CLSU) that includes the use of recyclable materials as containers for growing crops), greenhouse farming, hydroponics, research on urban and peri-urban food systems, and urban school gardens.

In early 2000, the Bureau of Agricultural Research (BAR) coordinated the development of a 5-year National Integrated Research, Development, and Extension Agenda and Program (NIRDEAP) on urban agriculture. This program aimed at developing and adapting urban agriculture technologies and practices enhancing the capacities of implementers, promoting, and implementing technologies and practices in and with communities, improving the nutritional status of urban households, promoting sustainable environments, developing production and marketing schemes, and policy advocacy (Campilan, Boncodin, De Guzman, 2000; Nitural, n.d.). However, the Urban Agriculture NIRDEAP was discontinued in mid-2000 as the DA changed its research program direction. The available materials about Urban Agriculture NIRDEAP were limited to the program agenda and partners.

In 2020, the DA introduced the “Plant Plant Plant Program”, which had a focus on UPA. The program was a response of the Philippine government under the administration of President Rodrigo Duterte, to the COVID-19 pandemic to ensure sufficient food supply in the country as well as other threats such as climate change (e.g., typhoons, flooding, and drought) and pests and diseases (e.g., African Swine Fever, Avian Flu) (DA, 2022). UPA was also identified as a key intervention under the Philippine Development Plan to

¹ CALABARZON stands for Cavite, Laguna, Batangas, Rizal and Quezon provinces in Region IV-A

achieve a sustainable and resilient agrifood system (NEDA, n.d.). Therefore, the Philippine government saw the urban and peri-urban agriculture initiative not just as an intervention to attain food security, but also to achieve food self-sufficiency and improve the country's agrifood systems.

NUPAP was institutionalized in 2022 by virtue of Administrative Order No. 3 (s. 2022). The program caters to individuals and groups, and community growers' associations (CGA), and aims on: (1) ensuring food security for the urban and peri-urban population, (2) shortening the food supply chain, (3) creating livelihood opportunities, and (4) promoting a healthy lifestyle (DA Memorandum Order No. 27, s. 2022) (**Table 3**). Activities linked to these target outcomes are implemented through partnerships with local government units, civil society organizations and the private sector.

Table 3. Specific NUPAP outcomes per target group

Target Groups	Target Outcomes
Individuals and groups	<ul style="list-style-type: none"> ● Improve household food security ● Improve health and nutrition ● Increase income and livelihood sources ● Achieve social cohesion ● Experience recreation and rehabilitation
Community Growers' Association (e.g., farmers association, cooperatives, agribusiness, social enterprise, corporate organization)	<ul style="list-style-type: none"> ● Increase food production ● Supply fresh produce to existing nearby markets through consolidation ● Achieve climate resiliency through use of climate-resilient-crops, technologies, and practices ● Derive other livelihood opportunities from establishment of at most 3000 sqm demo farm ● Serve as model for scaled-up food production ● Become source of seedlings for expansion of other urban farms

Source: DA Memorandum Order No. 27, s. 2022

Partnerships with other stakeholders is crucial to the program's implementation. Yet, NUPAP faced some key challenges. First, although it is a national program, it did not have a budget allocation from the national government (at least until 2022). NUPAP's budget was drawn from other ongoing programs such as the High Value Crops Development Program. Second, lacking an own budget allocation, staff members are seconded from other offices (DA, 2021) and are performing multiple functions (technical, administrative, M&E, communication, and information management). The implementing capacity of NUPAP is therefore quite limited. Hence, the main implementing organizations are local government units (LGUs), non-governmental organizations (NGOs), and people's organizations (POs).

3.2 The NUPAP implementation

NUPAP has three implementation components: (1) distribution of agricultural inputs for individuals and households, (2) establishment of urban gardens or farms (community and corporate), and (3) establishment of training and technology centers. It also involves various DA bureaus and agencies, and national programs as implementing partners responsible for specific UPA activities (**Table 4**). This is consistent with the One-DA Reform Agenda of the DA and encourages DA bureaus and agencies to work together and avoid working in 'silos'. This could also be an attempt of the program to establish relevant institutional arrangements to ensure the continuity of the interventions beyond the program life.

Table 4. DA bureaus, agencies and programs involved in NUPAP

DA Bureau and Agency	Activities
Agricultural Credit Policy Council	Credit support
Agricultural Training Institute	Distribution of planting materials Training and development
Bureau of Agricultural and Fisheries Engineering	Training and development Urban garden or farm establishment
Bureau of Agricultural Research	Training and development
Bureau of Animal Industry	Urban garden or farm establishment UPA technology promotion (beekeeping, native chicken and egg production, quail and egg production, rabbit raising)
Bureau of Fisheries and Aquatic Resources	Urban garden or farm establishment Aquaponics system establishment
Bureau of Plant Industry	Distribution of planting materials Urban garden or farm establishment Tissue culture laboratory establishment UPA technology promotion (mushroom production, ornamental plant production) Monitoring and evaluation PhilGAP certification and food safety
Bureau of Soil and Water Management	Urban garden or farm establishment
National Fisheries Program	Aquaponics system establishment
National Livestock Program	Urban garden or farm establishment UPA technology promotion (native chicken and egg production, quail and egg production)
Regional Field Offices	Distribution of planting materials Aquaponics system establishment

DA Bureau and Agency	Activities
	<p>Tissue culture laboratory establishment</p> <p>UPA technology promotion (beekeeping, native chicken and egg production, quail and egg production, rabbit raising, mushroom production, ornamental plant production)</p>

The Bureau of Plant Industry (BPI) and Agricultural Training Institute (ATI) are the two most involved DA offices in NUPAP implementation in Metro Manila. ATI coordinates with partners in the cities of Caloocan and Quezon, while BPI coordinates with the rest of the Metro Manila cities. BPI also works with DA Regional Field Offices in the coordination with partners in NUPAP sites outside Metro Manila. The Agribusiness and Marketing Assistance Services (AMAS) office has indirect participation through their KADIWA program (a DA initiative that aims in shortening the food supply chain by linking farming communities with markets).

There is no big deviation in the way these offices are implementing their NUPAP-related activities. The activities are aligned with their normal operations, such as distribution of farming inputs and materials, capacity building, and marketing support. This could also be due to the lack of a centralized NUPAP budget allocation. The contributions of the other DA partners are indirect, being part of their other programs (Example: DA-BFAR Aquaponics System). Coordination among these agencies, except between BPI and ATI, is not apparent. No inter-agency coordination meeting or activity was mentioned by the program implementers as an attempt to link program activities.

3.3 NUPAP urban farming technologies

Technologies and practices promoted by NUPAP to urban communities and organizations depend on the needs and interest and the limitations of the environment. Various models of support are summarized in **Box 1**. Partners and beneficiaries implemented one or a combination of models in their community gardens.

Different types of community gardens and farms under the NUPAP were observed in this study (**Annex 1**). A **communal garden or farm** is a common area maintained by a group of farmers, a cooperative or an institution. Members of community gardens share the harvest or the profit. Some communal gardens are carried out as social enterprises supporting causes like a scholarship program, operation of center for persons with disability, activities of women's organization, and company employees. A **community-based garden** is a common area within a community allocated to gardening and subdivided into plots. Each plot is managed and maintained by a group or organization. A **community-organized home garden** is a collective effort of a community but implemented in spaces within individual member's backyards or in spaces near their house. This activity is facilitated by social learning. They have regular meetings to share and discuss their gardening experiences, learning and concerns. They also share seeds and exchange harvested products. A **school-based garden** is used to showcase crops, practices and innovations; aid in teaching agriculture subjects; serve as laboratories for technologies and innovations development; support nutrition program (i.e., school feeding); and support funding of certain school operations. A **demo garden** serves as a demonstration and learning site. Some demo gardens are also used for seed production.

Corporate vertical farms were also included in this assessment, although they are not considered as community garden. These farms are in business districts near many institutional buyers, such as hotels, restaurants and hospitals. The common features of these vertical farms are the use of hydroponics, focus on high value crops (e.g., lettuce, basil, arugula, etc.), and highly market oriented.

Box 1. Various models under NUPAP

Conventional Community Garden refers to land cultivated by individuals, families or groups and planted with various high value crops as defined under the High Value Crops Development Act of 1995 (Republic Act No. 7900) and with crops declared as such by the DA Secretary. Crops are planted in plots for various purposes.

Community Farm refers to public or private spaces located in barangays or localities with community access for large scale food production.

Container Gardening is the growing of plants in containers such as pots, recycled materials, or other receptacles suitable for use on a balcony, patio, courtyard, indoor area, or room with adequate light.

Rooftop Gardening utilizes a building's rooftop area for growing fresh vegetables. This practice reduces the heat load of the building and thus the cost of electricity for cooling. It is also a barrier to break the wind.

Vertical Gardening or Farming takes into consideration the limited space in cities. Crops are grown in stacked layers, shelves, or modified pallets against walls. It is usually integrated with hydroponics or aeroponics and may partially control the growing environment of crops.

Hydroponics uses mineral solutions in an aqueous solvent instead of soil to produce plants and vegetables in a shorter duration.

Aquaponics is the integration of aquaculture and hydroponics, utilizing the synergy between the two systems.

Mushroom Production involves production of bedding-compost containing nutrients for mushrooms to grow, spawning, casing, pinning, and cropping.

Native Chicken and Egg Production involves the small-scale raising of native chickens in backyards.

Quail and Egg Production involves the small-scale raising of quails in backyards.

Rabbit Raising is breeding and raising small numbers of rabbits in backyards for meat production.

Beekeeping and Honeybee Production involves the raising of honeybees in a suitable environment.

Ornamental Plant Production is the growing of plotted plants or landscaping for aesthetic and decorative purposes.

Tissue Culture is the propagation of plants using tissues and organs grown in vitro or artificial media under aseptic and controlled environment.

Sources: Department of Agriculture Memorandum Order No. 27, series of 2022; Department of Agriculture Administrative Order No. 3, series of 2022)

There are common features within a specific community garden type observed across the 26 sites. A summary of the common features is presented in **Table 5**.

Table 5. Summary of common features observed across the sample of community gardens

Type of community garden	Commonly observed features
Communal garden or farm	<p>Implemented for food security</p> <p>Development of community leaders and organizers</p> <p>Leads to creation of formal or informal people's organizations</p> <p>An opportunity for social learning that encourages innovation development</p> <p>Encourages and support participation of marginalized sector, such as women, youth (students), persons with disabilities and senior citizen</p> <p>May lead to the creation of a social enterprise or an agri-enterprise</p>
Community-based garden and Community-organized home garden	<p>Implemented for food security</p> <p>Follows some organic farming approaches</p> <p>Values food safety (ex. minimal use of chemical fertilizer and pesticides)</p> <p>Development of community leaders and organizers</p> <p>Leads to the creation of formal or informal people's organizations</p> <p>An opportunity for social learning that encourages innovation development</p> <p>Encourages and support participation of marginalized sector, such as women, youth (students), persons with disabilities and senior citizen</p> <p>Encourages active community interaction through 'barter' or exchanging of harvest or organizing occasional informal market</p> <p>A form of recreation and stress release</p>
School-based garden	<p>Integrated with school nutrition program</p> <p>An opportunity for experiential learning</p> <p>Encourages innovation development through research and development</p> <p>A showcase of urban agriculture technologies and practices</p> <p>May contribute to cost-recovery through occasional informal market to support school operations</p> <p>Encourages participation of parents or guardians, and nearby communities</p>
Demo garden	<p>Promotes awareness about food crops and their benefits</p> <p>Encourages urban farming</p> <p>May contribute to cost-recovery through occasional informal market to support garden operations</p>
Corporate vertical farm	<p>Market-oriented</p> <p>High cost (capital, operation cost)</p> <p>Has established linkage to institutional buyers</p> <p>Located in business districts</p>

3.4 NUPAP simplified logic model

A simplified logic model, showing the range of activities that lead to target outcomes and result areas is shown in **Table 6**.

Achieving household food security is the primary target of NUPAP. The immediate outcomes contributing to this target are individuals, households or groups supported to: (1) grow their own food in backyards or communal areas within their community, and (2) start enterprises through production of value-added products. Program activities implemented to achieve these immediate outcomes include promotional activities to increase awareness about urban agriculture, partnerships creation, capacity building through training and seminars, distribution of planting materials and gardening kits, establishment of gardens, and provision of technical assistance. This set of activities were undertaken during NUPAP Phase 1 (2021-2022).

The second phase (2022-2025) focuses on improving food production in urban localities by upscaling operations and consolidating produce to supply to local markets and/ or distribute to communities during emergencies (i.e., relief goods, food packs). The target populations are urban farmer associations, cooperatives, and social enterprises. This phase also includes the establishment of demo farms or model farms for scaled-up production that would also serve as seedling propagation nurseries.

The long-term outcomes, programmed beyond 2025, focus on sustaining urban food production, augmenting domestic food production, ensuring food availability during emergencies and disasters, and improving the nutritional status of the population. **Figure 2** shows a diagram of the NUPAP timeline and program focus.



Figure 2. NUPAP timeline and program focus

Table 6. Simplified Logic Model derived from interviews with program implementers

Phase	Target Groups	Program Activities	Target Outcomes	Result Areas
2021-2022	Individuals, Households, Community-based Groups	<ul style="list-style-type: none"> ● Information and education campaign ● Distribution of starter kits ● Capacity building/ training ● Partnership building ● Establishment of urban community gardens/ farms ● Monitoring and technical assistance 	<ul style="list-style-type: none"> ● Households or groups establish their own backyard garden or participate in community gardens to grow their own food ● Households reduce their food expenses ● Households or groups engage in entrepreneurship such as production of value-added products as an additional source of income 	Household food security F.A.I.T.H. Food Always In The Home
2022-2025	Community Growers' Associations (e.g., urban farmers associations, cooperatives, social enterprises)	<ul style="list-style-type: none"> ● Organizing farms into formal groups to upscale operations and consolidate farms ● Establishment of model farms that are demonstrating scaled-up food production (these farms could also serve as seedling propagation nurseries) ● Establishment of market linkages ● Facilitating contracts with institutional buyers ● Establishment of processing centers ● Establishment of Urban Agriculture Centers for research, innovation development and education 	<ul style="list-style-type: none"> ● Community growers' associations increase food production through clustering and use of innovative agricultural practices ● Community growers' associations improve and sustain their production to supply to markets. ● Community growers' associations reduces their cost of operation and carbon footprint ● Urban dwellers increase their opportunity for employment through skills development and training ● Urban dwellers reduce garbage thrown into the dumpsites because kitchen wastes are used as compost materials and recyclables are used in container gardening 	Food production enhancement in localities H.O.P.E. Household and Organizational Production Enhancement

Phase	Target Groups	Program Activities	Target Outcomes	Result Areas
2022-2025	Community Growers' Associations (e.g., agribusiness, corporate organizations)	<ul style="list-style-type: none"> Establish corporate urban farms (e.g., indoor vertical farm) 	<ul style="list-style-type: none"> Corporate farms contribute to the increase of local food production without requiring large land areas Urban dwellers in business districts (where lands are expensive) have access to food locally produced in indoor vertical farms 	<p>Establishment of corporate farms</p> <p>L.O.V.E.</p> <p>Livelihood Opportunities through Vertical Entrepreneurship</p>

Notes: Community Grower's Associations refer to organized groups engaged in the business of farming, such as community-based groups, cooperatives, social enterprises, and business corporations (Source: DA Memorandum Order No. 27, series of 2022)

3.5 Other Urban Agriculture programs in the Philippines

It is important to note, especially in attributing impacts and outcomes to a program, that NUPAP is not the only ongoing program on UPA in the Philippines. NUPAP tries not to duplicate similar programs already in place, but supplements services and assistance as needed. For example, the New Greenland Urban Farm is an initiative of the Department of Agrarian Reform's Buhay sa Gulay Program and the Quezon City government's Joy of Urban Farming. NUPAP is not a direct partner in the initiative, but helped in land preparation, seed distribution and training. Also, the Department of Education has its own school-based garden program, which is focused on improving students' nutritional status. NUPAP supports the program through the provision of planting materials and other support, including training of teachers and marketing of surplus. Some organizations that provided support to NUPAP partners in the establishment and implementation of NUPAP sites are listed in **Table 7**.

Table 7. Other related urban and peri-urban agriculture programs in the Philippines

Program	Institution	Description
<u>Integrated Community Food Production (ICFP)</u>	National Anti-Poverty Commission (NAPC)	Supports poor communities grow their own food and obtain extra income by selling production surplus. One ICFP site in Barangay Bignay, Valenzuela City is being continued by the Valenzuela City government and supported by NUPAP.
Buhay sa Gulay Program	Department of Agrarian Reform (DAR)	Supports marginalized communities transform to flourishing communities through urban farming. The New Greenland Farm is in a floodplain with an impoverished community that is also vulnerable to flooding during typhoons and heavy rains. NUPAP provided support to the farm by helping in land preparation and by providing seeds and training.
<u>Gulayan sa Paaralan Program</u>	Department of Education (DepEd) and National Greening Program (NGP)	Aims to promote interventions to address food insecurity and malnutrition through establishment of school-based gardens. NUPAP provides seeds and planting materials to this program, provides training and technical support, and support marketing through the KADIWA program to partner schools.
<u>Quezon City Joy of Urban Farming</u>	Quezon City Government	Aims to address hunger by encouraging residents of Quezon City to grow their own food and establish enterprises from gardening. NUPAP supports some of the community gardens under this program with seeds and planting materials, training and technical support, and marketing support through the KADIWA program.
Masaganang Bukas Farmville	Quezon City Government	Located in the 2 nd District of Quezon City. Supports the establishment of community-based pocket gardens to encourage the communities to grow their own food and initiate related enterprises. NUPAP supported this program with greenhouses.

Program	Institution	Description
Edible Landscaping Project	University of the Philippines Los Baños (UPLB)	Initiated by UPLB and involves growing of vegetables, fruits, herbs, and medicinal plants with aesthetic and decorative considerations. UPLB and NUPAP support the establishment of an edible landscaping area in Rizal Park and eventually in other parks in the country. The main objective is to promote growing of food in urban areas.

3.6 NUPAP partnerships

NUPAP's partnership framework (**Figure 3**) suggests active participation of multiple stakeholders from the public and private sectors in various implementation activities and timeline. These partnerships were formalized through MOUs detailing the contributions and responsibilities of the DA and its partners. The partners provide space for setting up gardens, human resources, and utilities (water, electricity, security). They are also required to keep records of production and sales, innovations and technologies developed, activities conducted, problems encountered, visitors and trainees, and other records relevant to the program assessment. The agreement also included provisions for monitoring and assessment, done periodically by the DA.

The NUPAP also has direct and indirect partnerships with urban agriculture programs implemented by other national and local government agencies. Direct partnership means they have an MOU with the other organization, while indirect partnership means they are both supporting an urban agriculture project. An example of a direct partnership is an activity with District 2 of the Quezon City government. The DA and the Office of the Representative, District 2, Quezon City established greenhouses under the Masaganang Buhay Farmville Program. An example of an indirect partnership is with the Department of Agrarian Reform's Buhay sa Gulay Program and Quezon City's Joy of Urban Farming Program. These programs and NUPAP support the New Greenland Urban Farm in Bagong Silang, Quezon City.

The NUPAP partners are as follows:

- *National government agencies.* These agencies are either implementing their own urban agriculture programs (like the Department of Agrarian Reform) or collaborating with NUPAP in a project (like the Agricultural Training Institute). They are potential promotion, innovation and scaling partners through development, funding and implementation of programs at the national level. An important partner for the promotion of urban farming is the National Parks Development Committee (NPDC). This agency contributes to NUPAP through the promotion and implementation of edible landscaping in public parks. They are planning to organize a parks congress with local government units managing public parks to leverage edible landscaping in the promotion of urban food production.
- *Local government units.* These sub-national government units have their own urban agriculture program implemented within their administrative domain. One successful partnership is between NUPAP and Joy of Urban Farming in Quezon City. These local government programs complement NUPAP through the provision of inputs, field technical support, market linkages, and relevant institutional and policy support. These partners are more involved in community activities and interactions. However, local government programs are more disposed to changes when there is a change in leadership.

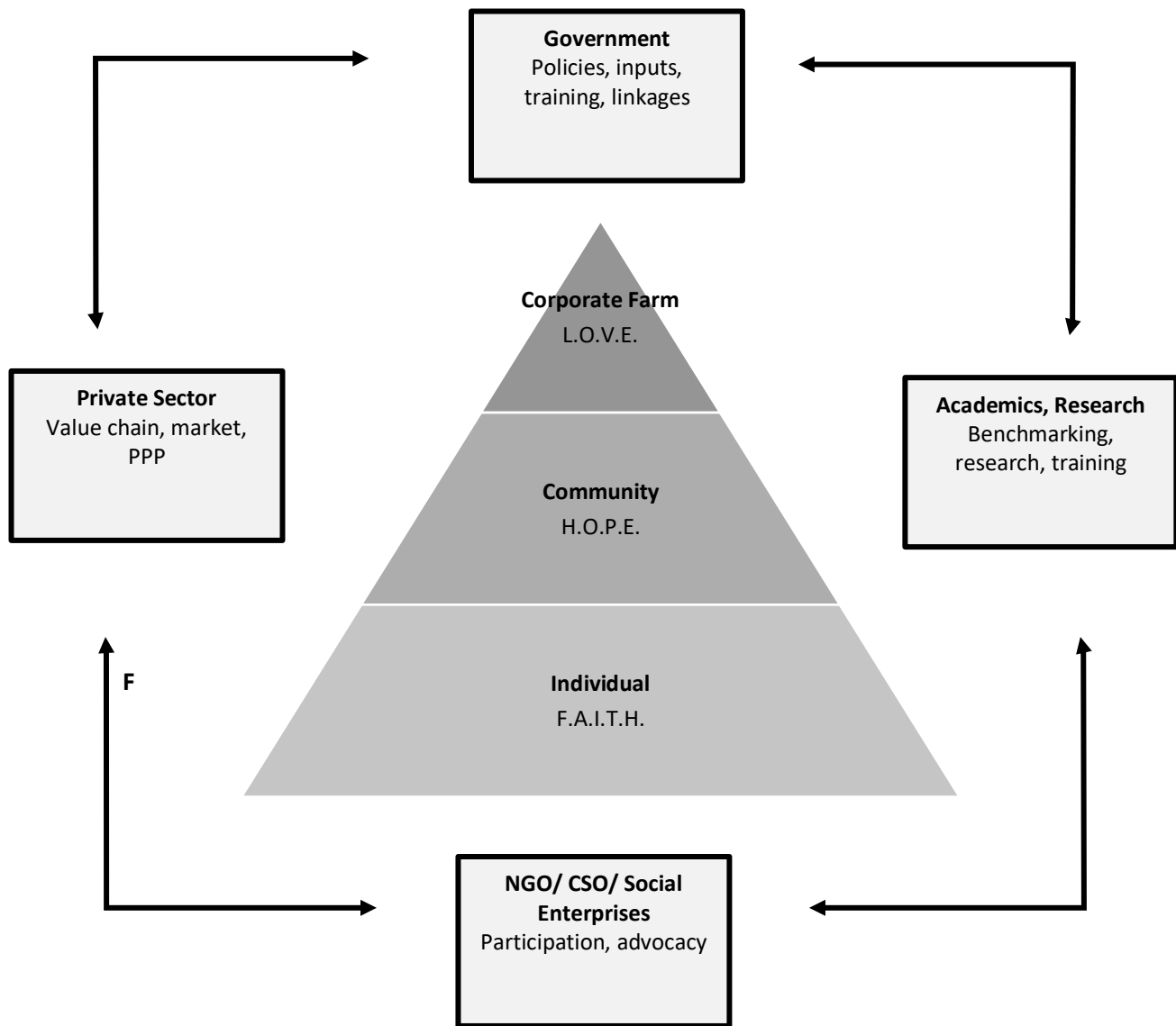


Figure 3. NUPAP Communities of Support (Source: DA, 2022)

Source: DA, 2022

- *Academics and research.* These institutions are innovation and scaling partners. They are responsible for the development of technologies and practices that will improve urban food production. An example is the partnership of NUPAP with the Philippine Agriculture and Resources Research Foundation (PAARFI). This partnership is about the implementation of a research project to identify the optimum conditions using hydroponics to enhance production and optimize the production cycle. The research is expected to contribute to the scaling of corporate vertical farms initiated by the NUPAP with other private sectors, such as Urban Greens PH and Planters Products. Existing corporate vertical farms are linked to institutional buyers, such as hotels and restaurants. Another example is the partnership between NUPAP and Quezon City University (QCU), which promotes urban agriculture to university students through the National Service Training Program (NSTP). They also have an innovation team responsible for the development of practical processes and products for household and community-level urban farmers. An example of an innovation is a small compost shredding machine made from old buckets, washing machine rotors and improvised blades. QCU is also building the Center for Urban Agriculture and Innovation, which is a research, instruction and demonstration facility showcasing various urban agriculture production systems.
- *Non-government organization.* Social enterprise is the core of the partnerships between NUPAP and some non-government organizations. For example, the partnership with the AKLAT Foundation in Malabon aims to create a community garden that can promote urban food production but also support the scholarship program of the Foundation. In Caloocan, the partnership with LERC aims to support the center's operations through an institutional garden and vertical farm.
- *Formal and informal community associations.* These include homeowners associations, women's organizations, senior citizen's groups, urban poor sector and church-based organizations. They are the ones directly working in community-based gardens and farms. These groups are mobilized by local government units (at municipal and barangay levels) or community leaders. In Disiplina Village, Bignay, a group of homeowners used vacant areas in the complex to establish a food production area for the community. The Kingspoint Joy of Urban Farming and Northwind Federation of Urban Farmers are examples of People's Organizations (POs) that coordinate between homeowners of villages and neighboring poor communities to use vacant areas within the villages for community gardening. In UP Village, a group of women who were working as domestic helpers before the COVID-19 pandemic created a community gardening association. Collectively, they asked the University of the Philippines administration for permission to use a vacant lot within the campus for gardening. Basic Ecclesial Community is a church-based organization in Malabon that implemented collective household gardening in vacant areas near their residence.
- *Private companies.* Food production in business districts was piloted by the program through partnership with private companies. They used building rooftops or warehouses to set up indoor vertical farms using hydroponics. This included hotels, restaurants, and communities near corporate farms. The objective was to help shorten the value chain, reduce transportation and storage costs, and ensure access to fresh and safe produce to company workers. Pilot vertical farms focus on high-value commercial crops such as arugula, lettuce, basil, and other crops that can be grown in a hydroponic system.

Most of these partnerships were formed through proactive campaigns and were coordinated with other ongoing urban agriculture programs, or sometimes upon request by interested partners. Partners bring

in resources (cash or in kind), while NUPAP may provide training, small machinery, farming/ gardening tools, garden soil, planting materials, organic fertilizer, hydroponics set up, mushroom production facilities and inputs, greenhouses, and other structures. Sometimes NUPAP also provides funding support.

3.7 Monitoring and evaluation

The DA and its partners check progress and results through monitoring and reporting indicators. **Table 8** lists the key data and records collected by the DA monitoring team and their implementing partners. Data are collected using pen and paper rather than digital methods. Forms are used to collect uniform data and information, which is later entered in an electronic database. AMAS, ATI and BPI maintain separate databases. Partners also have their own data recording systems. Collected production data is based on the past cropping period. If a partner does not keep timely records, the data that they report to the NUPAP monitoring team is based on estimates or recall.

Table 8. Key NUPAP monitoring indicators

Data collected	By	What is being measured?	Key results
No. of engagements through social media posts, dissemination of IEC materials and advisories	Agricultural Training Institute (ATI)	No. of individuals who became aware of the program, participated in the program, or appreciated the value of urban gardening or farming	Increased awareness on urban agriculture
No. of individual recipients of farming inputs and materials	Bureau of Plant Industry (BPI), ATI	No. of individuals who became aware of the program, participated in the program, or appreciated the value of urban gardening or farming	Increased awareness on urban agriculture
No. of visitors	BPI, ATI, Partners (demo farms)	No. of individuals who became aware of the value of urban gardening or farming	Increased awareness on urban agriculture
No. of agreements signed	Department of Agriculture Central Office, BPI, ATI	No. of partnerships established, and support provided (measures in monetary values)	Increased sectoral investments in urban agriculture
No. of urban and peri-urban sites established	BPI, ATI	No. and size of additional food production areas	Increased food production area within a given period (reason: some areas were leased for a certain period)
No. of trainees or participants of the training programs	BPI, ATI	No. of individuals who appreciate the value of urban gardening or farming	Increased awareness on urban agriculture

Data collected	By	What is being measured?	Key results
No. of individuals supported by the community gardens/farms	Partners (community gardens and farms)	No. of individuals who have access to safe and fresh produce from the community gardens	Increased household food security
No. of community-based organizations established	Partners (community gardens and farms)	No. of registered associations formed through establishment of community gardens that has access to social services	Increased access to social services and support provided by the government and other private organizations
Yield (kg/area)	BPI, ATI, Partners (community gardens and farms)	Productivity of the site at any given cropping period	Improved productivity over time
Profit (Philippine peso)	Partners (community gardens and farms), Agribusiness and Marketing Assistance Services	Net income from sales of the produce	Increased income over time

3.8 Benefits of NUPAP

The benefits of NUPAP gathered from the respondents (individual, household, community) involved in community gardening are summarized in **Table 9**. The list is based on people's perceptions and observations; there was no attempt to quantify changes in income, food expenditures or jobs.

Better physical and mental health, through access to safe and nutritious food and a better relationship with nature were commonly mentioned benefits of UPA to individuals. Participants are also able to improve their skill sets through the various technical and livelihood training provided by various UPA programs. This increases their opportunity to strengthen livelihoods or get jobs. Households and families were able to reduce their household food expenses or even generate additional income from selling surplus.

Community gardening was also instrumental to the empowerment of community leaders. They served as coordinators, community organizers, technical support providers, fund raisers and representatives to public councils. Community-based associations were formed and formalized through the facilitation of these leaders. These associations have an important role in enhancing the access of members to government and private sector support services, such as materials and machinery, credit and financing, information, training, and marketing. The associations also serve as social learning platforms, where participants and beneficiaries can share findings, lessons learnt and resources (e.g., seeds and planting materials, information materials). Other perceived benefits of community gardening include productive use of time of women and the elderly, and reduction of garbage delivered to landfills.

More established farms and gardens are already heading towards agri-enterprise development. They have facilitated linkages with institutional buyers. They are also considering agritourism as a viable enterprise that would generate new jobs and livelihood opportunities. The Gulayan at Bulaklakan Integrated Natural Urban Farm and New Greenland Farm are already planning the establishment of additional facilities like training area, lodging area, dining area, and shops.

Table 9. Perceived benefits of community gardening to households and communities

Individual	Household	Community
Improves access to fresh, safe and nutritious food	Reduce household food expenses	Rise of community leaders
Increase opportunity for employment or livelihood development through skills development and training	Increase family income from selling harvest	Formation of community-based organizations that facilitate members' access to social services
Productive use of time of women and the elderly		Promotes community interaction through exchanging of harvests
Gardening as a form of recreation and stress release		Development of urban food production culture through participation and social learning
		Reduction of garbage that goes to landfills

3.9 Problems encountered

Most urban gardens and farms were established during the COVID-19 pandemic. Many of these experienced implementation issues related to the availability of resources; damage from pests and diseases, typhoons and floods; and continuity of the program.

Land availability (physical and economic) is a key challenge for urban gardens in Metro Manila. Available large spaces for conventional farming are either in vulnerable areas (e.g., flood prone areas), or are no longer classified as agricultural land because the real estate value is too high. Other scarce farming resources are seeds, garden soil, and water.

Planting materials and garden soil were supplied to the beneficiaries by NUPAP or other programs. These resources were not accounted as costs thus affecting reported profit. Seed and seedling production areas are located outside Metro Manila. Irrigation water, from metered waterpipes, was costly and scarce during the summer months from March to May.

Crop damages in urban gardens and farms were due to rat infestation and flooding. House rats are a common pest in urban gardens in residential areas. Flooding is a perennial problem in Metro Manila. Most of gardens are not typhoon and flood-resilient and must be re-established after floods recede. Technical support is only provided upon request.

Most of the gardens and farms visited for this study have a short-term (for example, two years in Kingspoint Subdivision) arrangement with the landowners or homeowners' associations to use the free spaces for gardening. While this free-use-of-land arrangement has become an incentive to the beneficiaries to participate in urban agriculture, the short period is a disincentive to sustain or improve the garden.

Corporate vertical farms in Metro Manila were more successful in terms of attaining economies of scale. However, this type of urban farms requires high capital investments.

4 Recommendations

There was a rapid spread of urban agriculture initiatives during the COVID-19 pandemic, but challenges arose related to program implementation and sustainability. NUPAP provides an opportunity for DA bureaus and agencies to work together to achieve a common goal. A more coordinated and inclusive program implementation should happen at the top level, which could also address funding problems through sharing of resources. Moreover, the DA could expand partnerships with other NGAs to cover areas not currently addressed such as food and nutrition (with FNRI, NNC), livelihood training (with TESDA) and climate hazard vulnerability assessment (with DOST Project NOAH).

The participating bureaus and agencies of the DA should also focus on the creation of institutional arrangements that would provide long term support to the implementation of UPA in the Philippines. Studying different location- and context-specific cases from the implementation of NUPAP since 2020 would help the DA in the targeting or appropriate and relevant institutional and policy support. For example, if corporate vertical farms are more successful in highly urbanized areas like Metro Manila, then this could be expanded to other highly urbanized areas in the Philippines.

Targeting is also important if NUPAP aims to attain economies of scale. Knowing the comparative advantages of an area (could be a province or a region) in terms of available resources, enabling policies, and existing institutional support would aid NUPAP in identifying which areas are more suitable for urban food production. The availability and diversity of seed and seedlings is an important consideration. Beneficiaries should be trained on seed saving and seedling production.

Urban gardens and farms are vulnerable to climate hazards, such as typhoons and floods. Beneficiaries should be given training and support to implement climate-smart agriculture (CSA) technologies and practices to increase the resilience of urban gardens.

A social learning platform, such as a community of practice would help the urban communities appreciate the value of urban food production and enable the use of appropriate technologies and practices. Also, it would create an environment of mutual support and cooperation.

Monitoring and assessment are important and would benefit from more adaptive management of the program. Data are collected using pen and paper rather than digital methods, which makes data inaccessible and limits its use in adaptive management.

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Annex 1: Examples of community gardens

Type	Name of the Initiative	Description
Communal garden or farm	Livelihood, Education and Rehabilitation Center (LERC)	This was an institutional garden with indoor and outdoor hydroponics set up, greenhouse, container vegetable garden, rooftop garden, honeybee production, chicken production, composting area and rainwater harvesting area. The garden was managed and maintained by an NGO supporting about 20 persons with disability living within the center. The hydroponics set up was donated and initially supported by a church-based organization and a private company. The garden was the source of food and livelihood for the center. Income from sales was used to support the center's operational expenses. The immediate market for the produce was the community around the center.
Communal garden or farm	Integrated Community Food Production (ICFP) – Disiplina Village, Bignay (2,140 sqm)	This was a communal garden with conventional plot gardens, greenhouses, chicken coop, fishpond, mushroom production area, and composting area located in a block reserved for the village's church building. This was maintained by a group of residents of a public housing complex. All volunteer farmers (mostly women) helped in the maintenance of the garden and harvest or profit from its sale was divided among the members.
Communal garden or farm	New Greenland Farm (11,000 sqm)	This was a farm that has conventional plots planted with vegetables located in a floodplain. These plots were managed by the community that later became a formal farmers' cooperative supported by both national and local governments. This cooperative supplied vegetables to restaurants and hospitals.
Communal garden or farm	Lakas ng Nagkakaisang Kababaihan sa U.P. Campus Community Garden	This was a community garden established by a group of women who were working as helpers before the pandemic. They resorted to gardening during the pandemic to have a regular source of food for their families. Profit from sales of their harvest was used as revolving fund for the organization's activities.
Communal garden or farm	Malabon Gulayan at Halamanan sa Kabahayan Project	This was a community garden established by the AKLAT Foundation, an NGO that supported students through scholarships. The NGO started the gardening project in 2020 in an idle private lot to help promote gardening in Malabon City. After 2.5 years, they decided to keep the garden to serve as a social enterprise supporting their scholarship program.
Communal garden or farm	Dole Philippines, Inc. – Philippine Marketing Fresh Rooftop Garden	This was a rooftop garden that was established to support the employees that stayed within the company's premises during the pandemic. The garden was the source of food for the employees.

Type	Name of the Initiative	Description
Community-based garden	Sharon Farm (5,500 sqm)	This was a community garden established in an idle lot owned by a Catholic church and temporarily loaned to the barangay government. The garden area was subdivided into plot areas planted with vegetables and managed by various groups and organizations. The garden was located near the barangay's material recovery facility.
Community-based garden	Northwind Urban Farmers Federation Community Garden (~1,500 sqm)	This was a community garden established in Idle lots within a residential subdivision. The garden has common vegetables and herbal plants mostly planted in pots and receptacles.
Community-based garden	Kingspoint Joy of Urban Farming (~5,000 sqm)	This was a community garden planted established in idle lots within a residential subdivision and in part of the subdivision park area. These areas were loaned to organized groups (mostly urban poor from nearby barangays) for vegetable gardening. The community garden also has a mushroom production area and a greenhouse with hydroponics set up. It was also used as a training area for out-of-school youth. The training was funded by the USAID.
Community-organized home gardens	Masaganang Bukas Farmville (Total: 2,829.30 sqm)	This was a local government project that established community-level food gardens in 5 barangays within Quezon City District 2. The food gardens were in pockets of public and private lots, and a combination of communal and individual gardens. The project has a communal greenhouse for seed and seedling production. Other services provided by the project were training and marketing support. The project has served 1,433 beneficiaries (89% are women) as of 2020.
Community-organized home gardens	Basic Ecclesial Community (BEC) Household Garden	This was a group coordinated by the Diocese of Caloocan. The group promoted household gardening among its members. They coordinated the training for the members given by the East-West Company and the Agricultural Training Institute. They also coordinated the distribution of planting materials and information materials. Unlike other community gardens, the gardens (container and vertical) were in the member's backyard or in a public area near their house.
School-based garden	Center for Urban Agriculture and Innovation (under construction)	This was a proposed demonstration and learning site located within the campus of Quezon City University. It was a project under the Grow QC Program and the NUPAP.
School-based garden	Quezon City University Demo Garden	This was a demo garden that showcased various urban agriculture technologies and practices, including conventional plot garden, container garden, vertical garden, hydroponics, aquaponics, chicken raising, rabbitry, feed garden and composting. They also have an innovation team responsible for developing practical technologies from upcycling old and used materials (e.g. shredder using old buckets, blades and motors).

Type	Name of the Initiative	Description
School-based garden	San Diego Elementary School	This was a school garden primarily supported by the Department of Education's <i>Gulayan sa Paaralan Program</i> . The main objective of the program was to promote better nutrition among school children. The NUPAP supported the growth of the garden for food production. The school was already able to sell their surplus through the KADIWA outlets. The profit was used to support the operations of the garden.
Demo garden	Project GRACE (Garden Ready Always for Consumption of Everyone), Shrine of Our Lady of Grace Parish	This was a demo farm located within the church compound with vegetables and herbs planted in recycled containers and pots, a SNAP hydroponics system, an aquaponics set up, a rabbitry and a feed garden. The garden was maintained by the parish office and volunteer parishioners. The garden served as a showcase for the promotion of urban farming and a social enterprise. Profit from the sales of their produce was used to support nearby communities.
Demo garden	Gulayan at Bulaklakan Integrated Natural Urban Farm	Community gardening in Barangay Holy Spirit started in the 1990s, making this area the oldest community garden in Quezon City. In 2020 it was accredited as a learning site for agriculture by the Agricultural Training Institute. The garden showcased various gardening technologies, such as conventional raised bed gardening, container gardening, vertical gardening, greenhouse, hydroponics, aquaponics, and vermicomposting. The site also has its own seed and seedling production facility. The garden was located near the tourism and material recovery facility. It also has a training building and a nearby lodging facility.
Demo garden	Rizal Park Edible Landscaping Demo Garden	The Rizal Park Edible Landscaping Demo Garden was a garden area within the park planted with edible plants (vegetables, herbs). The purpose was to provide experiential learning to the park goers. The garden was maintained by the National Parks Development Committee.
Demo garden	Community Garden at BGC by Urban Farmers	Urban Farmers was an NGO that provided support to establishment of urban gardens. They set up a demo garden at the heart of a business district to showcase the value of food growing in urban areas.

INTEGRATED COMMUNITY FOOD PRODUCTION (ICFP) IN DISIPLINA VILLAGES

Valenzuela, Quezon City

Farm was part of an integrated program on housing, health and nutrition for 396 beneficiary families. Out of 396 families, 50 are active in the community garden while the rest on home gardens.



SHARON FARM

Barangay Novaliches Proper, Quezon City

It is one of the community model farms under the GrowQC Food Security Program of the local government. The site is 5,500 sq.m. land lent by the Diocese of Novaliches. The beneficiaries involved 14 organizations from different sectoral groups and were provided with plots. Plot size depend on the number of members of each organization.



QUEZON CITY UNIVERSITY

673 Quirino Highway, San Bartolome, Novaliches, Quezon City

The three campuses of Quezon City University in San Bartolome, Batasan, and San Francisco serve as demonstration sites and training ground for students. There is a plan to set up a Center for Urban Agriculture and Innovation that will serve as a demo farm for community farm partners.



GRACE URBAN AGRICULTURE DEMO FARM

Shrine of our Lady of Grace Parish
Grace Park, Caloocan

Project GRACE (Garden Ready Always for Consumption of Everyone) started with the objective to have food available in every house and to bring back the culture of bayanihan and barter among parishioners to lessen reliance on markets. The garden inside the church compound serves as showcase to attract investments/donors and for educational purpose as well. The initiative has been elevated to diocese level and are now being replicated in many households.



THE NEW GREENLAND FARM

Barangay Bagong Silangan, Quezon City

A 10-hectare community garden managed by the New Greenland Farmers Agriculture Cooperative and assisted by the Quezon City LGU. The cooperative has 107 members with 90% comprised of women. The LGU cannot construct permanent facilities because the land is CLOAble and have many claimants and also flood prone as it is near Marikina River.



LIVELIHOOD, EDUCATION AND REHABILITATION CENTER (LERC)
2438 Quirino, Malaria, Barangay 185, North Caloocan

LERC is a non-profit organization that provide services to PWD and uses the harvest from the garden for food of the PWD residents and income for allowance of volunteers. Garden not just help the PWDs but the community residents also buy from them.

