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# ***Making Vegetables Visible: Insights from Mindanao***

Ann Hill | April 2021

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# About the Centre for Sustainable Communities

The Centre for Sustainable Communities (CSC) contributes to healthy and sustainable social, cultural, ecological and economic futures by providing research and professional development services to communities, government and the private sector.

Our strengths, developed over more than fifteen years, are those of collaborative and participatory research in regional and community development in both Australian and international contexts. Working in partnership with communities and related regional and community agencies, we aim to:

- Build sustainable environmental, social, cultural and economic capacity through partnership in research and development
- Work with communities in the recognition of their own strengths, assets and capacities using processes which respect action learning and collaboration
- Develop strategies for change in response to evolving environmental, social, cultural and economic contexts
- Build leadership and professional networks that support sustainable and cooperative endeavours in communities.

The Centre's research highlights learning and development beyond formal education, in community and organisational settings and contexts where informal learning is significant. We are interested in how this perspective can contribute to the adaptation of formal institutions to the contemporary challenges of social and cultural change.

The Action Research for Development research group, within the CSC, uses asset-based community development analysis, appreciative inquiry, participatory action learning and the co-construction of knowledge to work with, and for, marginalised groups and/or those with low literacy. The group's research focuses on how groups can be reached through experiential and informal learning that harnesses and values their local knowledge.

CSC Director: Dr Katharine McKinnon

Monograph Series Editor: Dr Philip Roberts

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## Executive summary

Increasing small-scale vegetable production is a key target for growing a more sustainable food system. At first glance, meeting this target seems straightforward. On closer inspection, particularly in contexts experiencing the on-going effects of climate uncertainty and economic uncertainty, it can be hard to achieve. Community education has a vital role to play.

This monograph outlines community education best practice principles for promoting and supporting small-scale vegetable production, marketing and consumption, based on a study conducted in Mindanao, The Philippines. It generates local insights for wider application. The monograph assembles a toolbox of replicable, and adaptable ideas and methods. The toolbox is of value to end users around the world seeking to grow more sustainable food systems.

## Key findings

Key finding 1: Community education needs to start where the people are and with what they have

Key finding 2: Peer to peer learning is vital

Key finding 3: Building on existing effective knowledge and practice is key

Key finding 4: Fostering interdepartmental and cross-sectorial collaboration is paramount

Key finding 5: Participatory GIS mapping is an effective and replicable tool for making vegetables visible and supporting community education about plant-based diets

## Shifting focus from challenges to opportunities - Why does this matter?

Scientists are calling for a planet-wide food transformation by 2050, to counter an increasingly unsustainable global food system. A key target is an 100% increase in plant-based diets (vegetables, grains, legumes, and nuts).<sup>1</sup> At first glance, meeting this target seems straightforward. Households all around the world simply need to buy more, grow more, and consume more vegetables. Yet for many people, vegetables, and food production, more generally, represent a challenging way of life—thus, increasing plant-based consumption is not a straightforward exercise.

Vegetables may represent hard labour and a subsistence way of life experienced over several generations, involving much toil, sweat, and even bloodshed. Vegetables may represent food insecurity, with climate uncertainty and extreme weather affecting production and supply chains. Vegetables may represent horticultural multinational corporations gaining profit shares on the global stage, through buying out local small farmers and their means of production; leasing back and ‘developing’ their land; and clearing land that was once forested and cared for through various sustainable agroecological practices. Vegetables may represent market ‘middlemen’ taking a large profit share, with not much leftover for growers. They may represent poverty and just getting by, when people are looking instead to ‘get ahead’ and taste more affluence. Within this ‘field of view,’<sup>2</sup> vegetables can represent problems and challenges, and be something people wish to move away from.

Taking the Philippines as our example, we can see these problems and challenges in context. Today, the bulk of Filipinos’ food consumption goes to cereals, followed by meat and fish. Per capita consumption of vegetables only averages 22 kg/year, compared to the FAO recommendation of 146 – 182 kg/year.<sup>3</sup> There are various reasons for this. First, rural-urban migration and

increasing urban-based employment is enabling younger Filipinos with increased incomes to opt for energy-dense, nutrient-poor foods, and as a result, they are eating less vegetables. Second, typhoon-associated crop damages and extreme weather typically cause vegetable prices to rise, and this limits vegetable intake, particularly among low-income urban wage labourers. Since food is a major expenditure for lower income earners, their overall consumption of vegetables has been shown to fall whenever prices increase. Third, the Philippines remains highly vulnerable to weather-related disasters and climate change. It is ranked third for disaster risk worldwide and is the fifth most-affected country by climate change.<sup>4</sup> Although the archipelago has made substantial progress in disaster preparedness and risk reduction, there are on-going concerns about coping at local government and community levels. In the case of Mindanao, although it was once deemed ‘typhoon-free’, this is no longer the case, and the region is increasingly affected by climate uncertainty and extreme weather. This inevitably places additional strain on maintaining local food security through production of vegetables and other weather susceptible food crops.

While these are real challenges that need real solutions, focusing on the problems alone can lead to a sense of despair and disempowerment. This, in turn, can stymie efforts to bring about positive change. Rather than stay with the problems and challenges, we can choose to look at things differently. We can operationalise a different mindset and a more opportunistic field of view by undertaking a re-framing exercise. A common analogy for this re-framing is to shift focus from seeing the glass half empty (problems and challenges) to seeing the same glass, or circumstances, as half full (openings and opportunities).

***Shifting focus from seeing the glass half empty to seeing the same glass, or circumstances, as half full is important and made possible through education***

This reframing exercise is a community education exercise, and it is being undertaken in the Philippines in relation to promoting and supporting small-scale vegetable production, marketing, and consumption in Mindanao. This monograph details some of this reframing work.

The premise of this monograph is that vegetables present opportunities: opportunities for community learning in the face of extreme weather and other challenges; opportunities for reconnecting people with their food and with sustainable agroecology practices; and opportunities for improving livelihoods and health outcomes. This second field of view is the focus of this monograph.



**Participatory community food mapping in Balubal, Mindanao**

# Making vegetables visible in Mindanao – What did it involve?

## **Cross-sectorial stakeholders**

A range of stakeholders were involved in the Mindanao study. Key stakeholders and their areas of expertise are identified below:

- Archdiocese of Cagayan de Oro – committed to supporting marginal populations, including those relocated through extreme weather events and political conflict;
- Australian Centre for International Agricultural Research – contributed funding for the study, established track record of funding agricultural research in Mindanao, two ACIAR project workers attended some of the study activities for knowledge exchange purposes;
- Barangay Balubal, CDO – chosen as the study pilot site of small holder vegetable production near city, borders municipality of Manolo Fortich, Bukidnon, that has important vegetable supply chain links to CDO; Balubal has been implementing school and home gardening since 2008, a target for the city government in its post Typhoon Sendong resettlement program;
- Balubal National High School – senior high specialisation in agriculture, key Balubal site for food production and processing, and community education;
- Centre for Sustainable Communities, University of Canberra – hosted the project initiative and provided research support, Centre contributes to sustainable social, cultural and economic development by providing research and professional development services to communities, government and the private sector in Australia and elsewhere, particularly Asia-Pacific region;
- City Government, CDO – committed to mitigating against climate change through diversifying food production, exploring alternative livelihoods for informal settlers relocated post disasters; experienced in implementing smaller holder vegetable production programs;
- Department of Education, City Schools Division CDO – implements school garden programs mandated by national government in various schools across Northern Mindanao, introduced years eleven to twelve schooling over the past decade with specific vocational focus, including agriculture;
- Manolo Fortich Municipal Government, Bukidnon – strong agricultural networks with Barangay Balubal, important supply chain link;
- The Southeast Asia Rural Social Leadership Institute (SEARSOLIN) – outreach unit of Xavier University, international training centre dedicated to holistic human development to alleviate poverty within the context of diverse cultural and religious traditions in Asia, Pacific and Africa, supported the development of more than 1000 socially committed and competent leaders over past fifty years;
- Urban Food International – consultancy services in agriculture-nutrition-health nexus, voluntarily contributed knowledge and expertise to the study, Director, Dr Robert Holmer, long-standing involvement in leading and sustaining agroecology research and practice in and around CDO;
- Xavier University, CDO – local research expertise in disaster risk assessment, GIS and participatory asset-based community development mapping, agriculture, nutrition, health and sanitation, and community education.

### ***Participatory, visual, collaborative action orientated objectives***

The objectives of the Mindanao study were to:

- 1) Create opportunities for vegetable production, marketing, and consumption knowledge exchange in Northern Mindanao, via presentations and real-world story telling;
- 2) Compile local food, nutrition, and agroecology snapshots, comprised of video, photographs, and stories, following on from 1) above;
- 3) Co-construct local food system knowledge using participatory mapping and asset-based community development methods, as well as GIS-generated base maps of Cagayan de Oro city, for inspiration and spatial perspective;
- 4) Identify collaborative actions to enhance livelihood and health outcomes for small-scale vegetable producers and the wider population around CDO City, including strengthening links with markets, supply stakeholders, and institutions.

### ***Hands on workshops and meetings***

The international interdisciplinary team of organisers in the study facilitated two participatory workshops. Workshop 1 was held at the Southeast Asia Rural Social Leadership Institute (SEARSOLIN) of Xavier University in Cagayan de Oro. The focus of this workshop was to bring all the key project stakeholders together for cross-sectorial knowledge sharing and collaborative action on food systems change (addressing Objectives 1, 2, and 3). Around fifty participants were involved in this workshop. It ran for one full day of sessions.

Workshop 2, also a one-day event, was held in the barangay or neighbourhood of Balubal, on the outskirts of Cagayan de Oro City, at Balubal National High School. It was attended by around thirty Balubal residents as well as twenty stakeholders from Workshop 1, who wanted to learn more about the community food mapping methods used in Workshop 2, and to see the demonstration food gardens at Balubal High School. This workshop addressed all objectives, with a particular focus on co-constructing local food system knowledge, using participatory mapping methods underpinned by asset-based community development ideas (Objective 3).

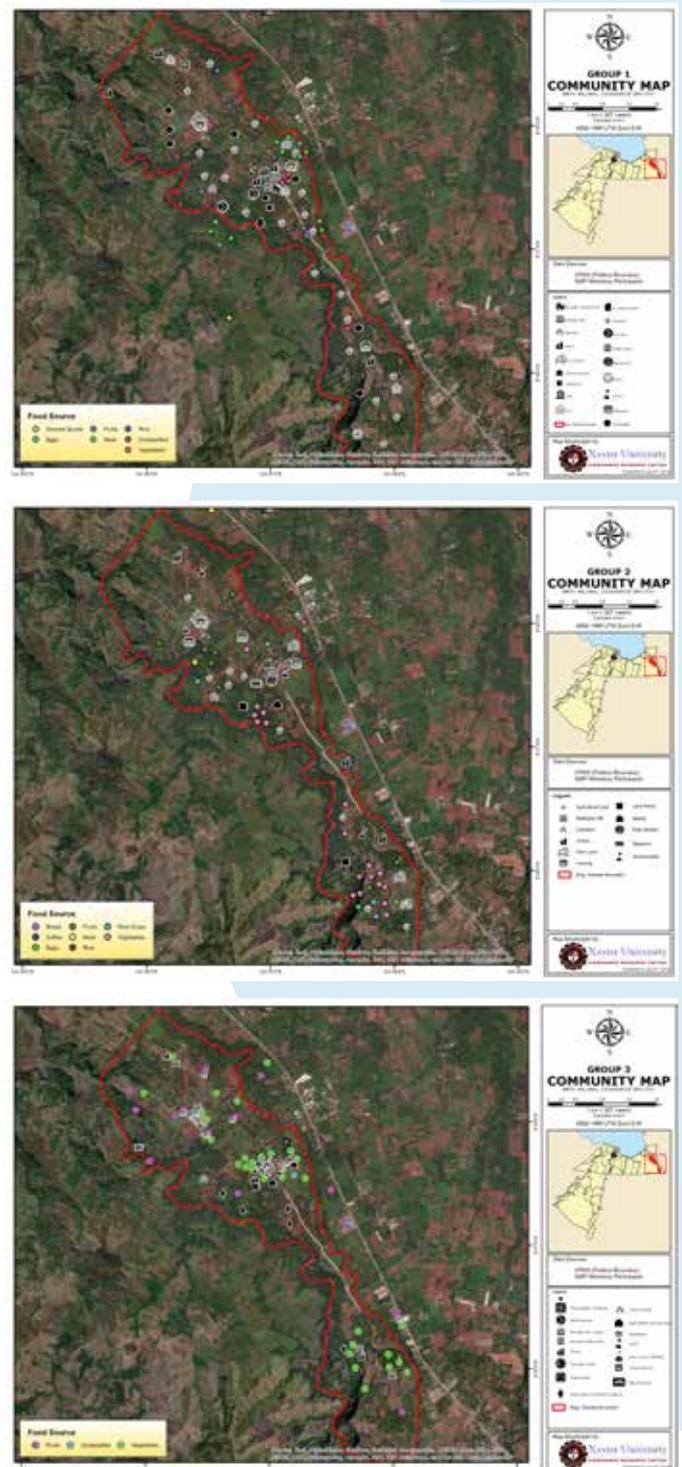
Beyond the workshops, a cross-sectorial core group met twice, to formulate actions for growing, promoting, and supporting small-scale vegetable production, marketing, and consumption across CDO City (Objective 4).

### ***Participatory community-based food mapping***

At Workshop 2, each group compiled a map that was quite different to the next. Each map reflected different food choices and preferences. Group 1 identified eleven different sources of meat or meat products, and this is likely a conservative estimate, as they ran out of time and pinpointed another seven food sources that were yet to be classified. Group 2 only identified one source of meat within Balubal and one other meat source outside the Balubal boundary, but still within the space represented by the map. Group 3 identified no meat sources. Group 1 only identified five sources of vegetables on their map, whereas Group 2 identified eighteen sources of vegetables, ten sources of fruits, and five sources of root crops. Group 2 identified many sources of food away from the Balubal centre, at the southern end of the barangay, and most of these identified foods were plant based, with

several farmlands nearby also identified on their map. Group 3 identified thirty-three sources of vegetables and fourteen sources of fruits, both within the centre and the outlying areas of the barangay.

Each map also reflected different aspects of community knowledge of Balubal's physical, social, and economic resource base, and different thinking processes regarding potential assets that could be mobilised in Balubal-based food production. There were some commonalities. Each group identified schools, both the high school and elementary schools, and each group also identified the barangay hall, the health centre, churches, and the cemetery. There were a number of differences. For example, Group 1 identified twenty-one farmlands. Group 2 only pinpointed three areas of farmland, and Group 3 did not mark any farmlands on their map. Group 2 identified two 'land parcels,' without specifying a possible use, whereas Group 3 identified five 'vacant spaces for possible gardening.' Group 3 identified six resettlement sites, where climate refugees who were forcibly relocated post-typhoon Sendong, now lived. Group 1 and 2 both identified settlement and housing, but did not give particular emphasis to the resettlement sites.



Balubal community food maps

# Guiding ideas and methods - What replicable and adaptable ideas and methods informed the Mindanao study?

## ***Community partnering***

The study adopted a 'community partnering for local development' approach.<sup>5</sup>

Community partnering is a research approach that helps people to imagine and enact new pathways for local development. It aims to develop action-oriented partnerships to increase the wellbeing of local people and to open up new opportunities for local development. In the study, the focus was on opening up new opportunities for small-scale vegetable production, marketing, and consumption.

In order to open up new development pathways, the community partnering approach begins with a reframing exercise that involves shifting focus from the problems and challenges, toward the strengths, assets, and opportunities within communities. Reframing is modelled and practiced using ideas from asset-based community development and diverse economies.



***Focus on the glass half full of existing strengths, opportunities and assets***

## ***Utilising community assets for change***

"When asked whether the glass is half empty or half full..." many of us might first think of all the things that make the glass half empty. It is the same in many of our communities. Communities can be easily framed in terms of what they lack, and what needs, problems, and challenges weigh heavily on people's minds. This can lead to a sense of helplessness and the belief that outside experts should be called in to assist and to help overcome

barriers to local development. It can also lead to the generation of a wish list, with money at the top of that list. When money is hard to come by, people begin to see themselves as dependent on handouts from external agencies and those in positions of power. Rather than feel dependent on external assistance, through shifting focus toward analysing existing strengths, assets, and opportunities within communities, people can be encouraged to become drivers of their own developmental process.

Starting where people are with what they have, an asset-based approach encourages a ground-up (re)assessment of what is already working in a community and what makes for 'a good life.' It prompts consideration of what could be done to further engender social, economic, and ecological wellbeing in context. It prompts consideration of how local community can be involved and take the lead in initiating positive changes. Outside experts, finances, and resources might be called upon, but they are enrolled as, and when, needed. Their initial absence does not prevent a community development process from beginning.<sup>6</sup>

## ***Seeing, valuing, and enacting diversity***

When we look closely at communities, we find that many of the economic activities that engender wellbeing take place outside of the formal business sector, and involve unpaid work. We see work and transactions taking place within and between families, households, kin networks, and neighbourhoods. We see the importance of child and elder care, borrowing and gifting, and barter and reciprocal exchange. Indeed, a range of diverse economic activities contribute to community wellbeing and quality of life. Yet when it comes to questions of economic development, these activities are often ignored and rendered insignificant.

Economic development is often focused on large-scale industrial activity and markets—this is something that needs to be redressed. Increasing climate uncertainty and global threats to planetary and human health have

been brought about precisely because of over reliance on large-scale industrial economic activity, as a one size fits all model of economic development. Instead of one size fits all, we need to maintain and foster diversity in our economic systems. Just as ecological systems are more resilient with a diversity of species, and multiple inter-related inputs and outputs enable recovery and flourishing beyond shocks, economic systems are much more resilient when diverse forms of labour, transactions, and enterprise are maintained and valued.<sup>7</sup>

Working hand in hand with the research approach and ideas described above, are two key methods, described below.

### ***Using participatory workshops for ground-up community education and learning***

The Mindanao study employed a participatory workshop methodology. Workshops, in general aim to create space for participants to share and exchange ideas, and formulate new actions in response to those ideas. To varying extents, workshops enable participants to co-construct new knowledge. This is a key feature of a participatory workshop. It is about creating opportunities for participants to re-think and challenge existing ideas that are outmoded or undermining other important ideas, and then co-construct new knowledge, and forge new paths for meaningful collaborative action.

With the study, members of the international interdisciplinary team of organisers had prior experience in running participatory workshops in the same context.<sup>8</sup>

They had strong existing local networks, and these networks helped create a workshop space where stakeholders from various different sectors could communicate and collaborate effectively within the short

timeframe of the study. Workshop activities were designed with a practical emphasis. For example, in Workshop 1, participants were asked to imagine a scenario in which the City of Cagayan de Oro was under siege, much like what happened in nearby Marawi in 2017, when a five-month long battle between Philippines government security forces and militants aligned with the Islamic state, threatened Marawi's local food security, livelihoods, and wellbeing. Participants were asked to consider: What if there is a food crisis in Cagayan de Oro? Imagine the following scenario: A siege of CDO similar to Marawi occurs; what happens if CDO is cut off from food supplies coming from Bukidnon or other areas; how long can we exist without food imports from other areas?

This workshop activity was designed to get people exchanging knowledge and ideas about what was already working in their communities, that could be fostered and built upon. It was also designed for participants from different sectors and institutions to practice collaboration in crises situations, and to strategize how to best pool their resources and harmonise their efforts to support local communities.

### ***Participatory mapping method***

The study took inspiration from a vegetable-mapping project in Bangkok, Thailand, from 2012 to 2013, which combined community food mapping and GIS-mapping technologies to better understand the food system of greater Bangkok.<sup>9</sup> The Bangkok study highlighted the role small-scale vegetable producers, community gardeners, markets, consumers, and street vendors can play in supporting food and nutrition security. The mapping revealed the importance of diverse food economies supporting greater Bangkok. It highlighted the importance of: street vendors in Bangkok's food supply; indigenous vegetables, with more than 150 different vegetable species being traded in Bangkok markets and; the importance of people growing their own vegetables and fruits at home. Home production was shown to improve food and nutrition security, even when cultivation was small scale. The study was useful in making visible various vegetable

and other plant-based food economies outside of formal business and markets.

The Bangkok study was also useful in attempting to capture what was actually happening on the ground, in terms of food production, consumption, and markets, and where, if any, potential gaps were, in terms of geographical areas and communities that had the greatest needs. Food needs and challenges into the future for Southeast Asia were also identified. Rapid urbanisation was reflected in the mapping and urbanisation-related dietary changes flagged, with non-communicable diseases, such as obesity, diabetes, and heart disease on the rise. Ensuring safe, nutritious, culturally appropriate food is available, accessible, and affordable year-round, was identified as one of the most pressing concerns for the region. Climate change was seen as posing a major risk to food and nutrition security, as was environmental degradation. All of this is an important backdrop for the Mindanao study.

While the Mindanao study recognised the sorts of problems and challenges identified above, the focus of this study was on creating opportunities for community education and learning. Mapping methods were designed to create opportunities for ground-up community learning about how to improve livelihoods and health outcomes through increasing vegetable production and consumption. Mapping was employed as a community learning tool, and framed within asset-based community development.

Workshop 2 commenced with an orientation and briefing on the concepts, principles, and practices of asset-based community development. Two members of the international interdisciplinary team of organisers facilitated the session. They were used to running workshops on

this topic. They were well equipped to provide local context and local Bisayan language perspective on an asset-based approach. Having facilitators who are locally connected and trusted is important. It maximises opportunities for education and learning. In the study, the facilitators orientated participants to thinking about assets, strengths, and opportunities in their local community, as a lead in to participatory community food mapping.

The participatory mapping exercise began with pre-generated GIS base maps of Balubal. The GIS base maps enabled spatial visibility and representation of a nearly sixteen-kilometre squared area of the barangay (see the scale of the Balubal map on page 10). GIS base maps were then covered in sheets of plastic, so that groups could annotate the map with coloured markers, sticky dots, and masking tape.

Three groups, each comprising eight to ten Balubal residents, participated in the mapping. First, groups were asked to identify physical resources as local physical assets, such as river systems and mountain ranges, and then social and economic assets, such as schools, churches, the barangay hall, government offices, convenience stores, farmlands, vegetable gardens, and fish ponds. Groups were also asked to think about what they had eaten over the past twenty-four hours, and to pinpoint the types of foods they had sourced within the space represented by the map.

## Findings – What replicable and adaptable ideas and methods emerged from the Mindanao study?

There are five key findings of the study. Each finding is a key insight that has wider application and the potential to inform further research in The Philippines and elsewhere.

***Start where people are and with what they have***

### ***Finding 1: Community education needs to start where people are with what they have***

During Workshop 2, Balubal residents applied a ‘start where we are with what we have’ mindset. They thought about what they already had in relation to locally available food crops. They discovered they were already successfully growing many vegetables and root crops in their barangay, including bitter melon, spinach, sweet potato, and Chinese long beans.<sup>10</sup> They discovered Balubal produces a lot of cassava, a nutty-flavoured, starchy root vegetable native to South America, which is a useful staple during times of crisis or extreme weather, when supply routes are affected and usual staple crops, like rice, are in limited supply.

They also discovered that the school, where the workshop was being held, was actively promoting gardening among all the students and the wider community. At the time of the workshop, the school had 680 students, who were all involved in a vegetable gardening program after their usual classes each day. Each class was responsible for care of plots spread across the 1.5 Hectares of school grounds.



**Students tending their vegetable gardens at Balubal National High School**

During the workshop, students were preparing the soil and planting out okra, eggplant, asparagus, beans, and pechay (leafy greens).<sup>11</sup> School garden produce was available for sale on weekend market days, and profits from sales divided between class members (60%) and the school feeding program (40%). Produce was also being gifted to other nearby schools, as part of their school feeding programs to combat malnutrition. Workshop participants saw firsthand that many of the senior students were gaining new knowledge and skills from undertaking the school’s specialist program in organic agriculture, and this new expertise among the youth was filtering out into the wider community, into households where the students lived, and into the neighbourhood. Balubal National High School was already recognised, by the Presidential Commission for the Urban Poor of the Office of the President, as a national model for climate-change adaptation, mitigation, and food security.

Starting with a mindset of thinking about what they already had, meant workshop participants were encouraged to see afresh, the important role the high school was playing as a community education hub. It was making vegetables visible, and sharing knowledge, practices, and produce among the community, and this was something that could be built upon.

It is easy to overlook resources, knowledge, and capacity already at hand, particularly when the challenges and problems weigh heavily in a community. Yet starting where people are with what they have is important. It instills pride and hope, and creates opportunities for community-driven change.



## ***Incorporate peer-to-peer learning***

### ***Finding 2: Peer-to-peer learning plays a vital role***

During Workshop 2, participatory mapping report back, each group took a turn of sharing their map and explaining some of their discoveries during the mapping process. One Muslim woman recounted her knowledge of various indigenous edible plants growing wild in the neighbourhood. Other participants were surprised to hear they could eat the plants she described, and when she located them and explained in more detail how she used them in her cooking, there was much discussion about increasing production and availability of those, and other, wild-food plants across Balubal.

Another point of peer learning emerged following the discovery that many Balubal residents were purchasing fresh vegetables in CDO city markets and transporting them back home by motorbike or jeepney (an open kind of bus). It was a journey that often took two hours, or even longer, when the traffic was heavy. A common story

was that fresh vegetables quickly deteriorated in transit. Through peer discussion, workshop participants began to explore how the local community could create their own neighbourhood-based vegetable supply chains. They discussed a piece of land that was being used for pig raising, and agreed it would be much better put to use for vegetable production, with several families able to tend a parcel of the land and grow vegetables for household consumption and door-to-door sales in Balubal.

Discoveries and learning occurred as a result of Balubal residents exchanging their own knowledge and ideas during the workshop. Workshop activities created opportunities for collective learning and community-initiated actions. Instead of looking to outside experts to guide community education and development efforts, participants looked to each other, and combined their different understandings of their local places, dietary food habits, and food systems, to think through positive changes they could make.



## ***Build on existing effective knowledge and practice***



Workshop 1 Participants



Workshop 2 Participants

### ***Finding 3: Building on existing effective knowledge and practice is key***

The saying ‘There’s no need to re-invent the wheel’ rang true in the study. Many participants who attended the workshops had some familiarity with vegetable-growing efforts across Cagayan de Oro over the past decades. Either they, or their family members, had been involved in Department of Education initiatives at Balubal High School, or they had been involved in City Government programs, or connected to the long-running vegetable growing and agroecology initiative in Cagayan de Oro City, called the Peri-Urban Vegetable Project, which began in 1997.

The Peri-Urban Vegetable Project began as a funded research project on vegetable production and agroecological experimentation at Xavier University. It subsequently became a research entity in its own right, attracting many international funding grants. It trialed various practices, including integrated solid-waste management, ecological sanitation, basic hygiene, and urban gardening. It combined agronomic, health, and socioeconomic knowledge and practice. It responded to food security, health, and income concerns in the city. Between 2003 and 2008, it established ten allotment gardens for 100 families, living on basic incomes in six city districts, as well as food gardens within the premises of two elementary (primary) schools, and Balubal National High School. Container gardening schemes were also initiated in various locations, including two high schools and a women’s shelter. Urine-diverting dehydrating toilets (a type of composting toilet developed by the project that has separate receptacles for liquid and solid waste collection) were installed. This work continued for thirteen years, until the research entity ceased operations in July 2010, due to a discontinuation of funding.

During the study, knowledge and experience of this former initiative was reactivated. Education resources created by the Peri-Urban Vegetable Project, such as the allotment

gardening manual, were shared and discussed.<sup>12</sup> Temporary land-sharing arrangements established during the Peri-Urban Vegetable Project were also discussed. To say a bit more about how these arrangements worked: first, an appropriate government official from the barangay council would approach the private landowners, to ask if landless families within the barangay could use their land for food production. Involving the barangay councils as negotiators with private land owners was a deliberate strategy to cultivate the grounds for negotiation within neighbourhoods, and foster community empowerment in decision making. Once negotiations between land owners and the barangay council occurred, the conditions for land could be formalised in a memorandum of agreement.

Knowledge of these land-sharing arrangements was particularly relevant to the participatory mapping exercise in Workshop 2. During the mapping, groups identified vacant land in Balubal as possible sites for vegetable production. They discussed how land access and sharing would be negotiated, as the land was mostly privately owned. Some group members were able to draw on knowledge acquired through the Peri-Urban Vegetable Project and prior experience of land access and sharing arrangements, and this helped groups make informed decisions building on their own experience and knowledge.

Initiatives like the Peri-Urban Vegetable Project create knowledge and practice, that can appear to be of little use when the initiative ends and the formal structures guiding activities fall away. Yet, this knowledge and practice can continue to play an important role and be reactivated when new opportunities present, as they did during the study.



***Foster interdepartmental and cross-sectorial collaboration***

#### ***Finding 4: Fostering interdepartmental and cross-sectorial collaboration at municipal and community levels is paramount***

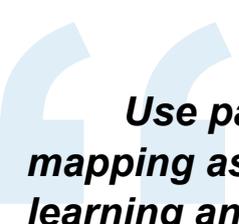
Historically, government and non-government sectors in the Philippines have found it difficult to work together and to trust each other. With ongoing economic development challenges, and increasing climate uncertainty and extreme weather, it is paramount that different stakeholders and sectors work together and collaborate effectively. One of the benefits of effective collaborative action is that it generates more strength, power, and capacity within organisations. In the words of the Cagayan do Oro City Mayor, who attended Workshop 1: 'The more we collaborate and harmonise our directions and strategies, the stronger each one becomes' (Hon. Oscar Morena, City Mayor, Cagayan de Oro City, 9 July, SEARSOLIN, 2019).

Another benefit of collaboration is that it increases the capacity of a range of stakeholders to address shared concerns, such as supporting communities in rebuilding their livelihoods after a typhoon. Through pooling their resources and knowledge effectively, stakeholders can better implement community education strategies that lead to positive change.

An opportunity for this kind of collaborative action emerged in the study. In Workshops 1 and 2, participants discussed the ongoing effects of Typhoon Sendong (internationally known as Washi), which struck Northern Mindanao in December 2011. Sendong caused flash flooding and severe landslides, which led to the loss of over 1,200 lives, and the displacement of more than 250,000 people: almost 40% of the city's population. Around 85% of the affected households lived in informal settlements near or along the Cagayan River. In the workshops, questions arose around how to best support 1,200 families displaced by Typhoon Sendong, who had been relocated to a fifteen-hectare area of land in Balubal. Families were living in low-cost housing, constructed using disaster relief funds,

donated by the Japanese government. One of the issues that arose in Workshop 2, was that many of the longer-term Balubal residents were concerned about the nearby Sendong resettlement site. They viewed the relocatees as a threat, and expressed distrust of them. Other workshop participants who represented government and non-government sectors, and the international team of organisers, challenged this perspective, and expressed the view that relocatees did not need to be seen as a threat. Instead, the resettlement site presented an opportunity.

Once relocated to Balubal, many families needed to reconfigure their livelihoods. They now lived two hours away from their previous home and barangay, which meant many of them could no longer keep their former jobs and income streams. The City Government and other organisations argued relocation was an opportunity for increasing vegetable gardening and household waste management across the resettlement site. When the housing was built, the mayor expressed to local media that he wanted the resettlement site to be a self-contained community, where everything was within households' reach, including fresh food supplies. Despite these intentions, at the time of the workshops, vegetable gardening and self-sufficiency, was not yet implemented across the resettlement site. This is an opening for further development. The study core group of key stakeholders has an important ongoing role to play. Collaborative action supporting community education about the importance of small-scale vegetable production and consumption needs to be prioritised.



***Use participatory GIS mapping as a tool for peer-to-peer learning and collaboration***

***Finding 5: Participatory GIS mapping is an effective and replicable tool for making vegetables visible and supporting community education about plant-based diets***

Mapping methods in the study created opportunities for community learning about the vegetables growing in backyards, wild places, and neighbourhood plots, and about assets and resources at hand that could be harnessed in community-initiated action to increase plant-based diets. A key aspect of the mapping tool effectiveness is the opportunity for peer-to-peer learning and collaboration, created through the mapping process.

The study generated learning opportunities for replicating the mapping techniques elsewhere. Workshop participants from various neighbourhoods across Northern Mindanao, who visited Balubal to observe the mapping process, expressed their enthusiasm for undertaking a similar mapping exercise in their communities. The study revealed that the mapping techniques are simple to replicate across place and space. Some initial discussions about how to do this took place in the study and the opportunities for supporting community mapping through online training were explored.

Online training opportunities are highly desirable while COVID-19 travel and research adjustments are still in effect. Training place-based community researchers in the community food mapping process is something that can be done online. Online participants from different places can share context-specific data such as digital mapping samples, GIS base maps, and video and photo stories of place-based diverse food economies. This presents as an exciting opportunity for working between Australia, The Philippines, and other places, via online study exchanges.

Mapping is a community education tool that has many flow on effects. It can be used to increase the uptake of vegetables and plant-based diets and to motivate small-scale vegetable production, leading to increased household income from vegetable sales, and improved household nutrition. Other wider education benefits may also follow. Local concerns in various places about loss of skills and knowledge in agriculture and household and neighbourhood-based food production, as well as the decline in study of agriculture/food production in higher education institutions, could be addressed.

***Participatory GIS mapping techniques are simple to replicate across place and space and training can be done online***

# Making Vegetables Visible toolbox of ideas and methods - Where to from here?

This monograph has assembled a toolbox of replicable and adaptable ideas, methods, and key insights for promoting and supporting small-scale vegetable production, marketing and consumption.

Drawing on the Mindanao study, the monograph has revealed what is possible in a place experiencing ongoing economic and climate related challenges. It has highlighted the vital role community education can play in promoting

and supporting local transitions to a more sustainable food system.

Beyond this study, there is a wealth of opportunity to put these ideas, methods, and insights into practice in wider contexts.



Balubal National High School vegetable gardens

**Community education needs to start where the people are and with what they have**

- Asset-based community development (ABCD) approach
- Participatory workshops introducing ABCD
  - Participatory mapping using ABCD

**Participatory GIS mapping is an effective and replicable tool for making vegetables visible and supporting community education about plant-based diets**

- Participatory mapping with collaboration, and group discussion and sharing components
- GIS generated base map upon which layers of community generated data are added in the participatory mapping
- Online training in mapping techniques
- Online sharing and discussion of participatory mapping data across place and scale

**Peer to peer learning is vital**

- Participatory mapping with collaboration, and group discussion and sharing components
- Participatory workshops with collaboration, and group discussion and sharing components
- Community partnering process



**Toolbox:  
of replicable and  
adaptable ideas  
and methods**

**Building on existing effective knowledge and practice is key**

- Cross-sectorial knowledge exchange and story-telling at participatory workshops including sharing stories of 'success'

**Fostering interdepartmental and cross-sectorial collaboration is paramount**

- Community partnering process
- Participatory workshops with collaboration, and group discussion and sharing components
- Choose locally connected and trusted workshop facilitators

## Endnotes

1. Willett, W., Rockström, J., Loken, B., Springmann, M., Lang, T., Vermeulen, S., & Jonell, M. (2019). Food in the Anthropocene: the EAT–Lancet Commission on healthy diets from sustainable food systems. *The Lancet*, 393(10170), 447-492. <https://eatforum.org/eat-lancet-commission/>
2. The term ‘field of view’ describes restrictions on what is visible when an external apparatus, such as glasses or a camera lens, is utilised. Here, the apparatus that restricts vision is the mindset of problems and challenges.
3. <http://www.fao.org/3/a-i6756e.pdf>
4. Department of Foreign Affairs and Trade DFAT, (2018). Philippines Aid Program Performance Report 2017-18, 21 September. <https://www.dfat.gov.au/about-us/publications/Pages/philippines-aid-program-performance-report-2018-19>
5. [www.communitypartnering.info](http://www.communitypartnering.info)
6. This text was adapted from [www.communitypartnering.info](http://www.communitypartnering.info)
7. For more information, see [www.communitypartnering.info](http://www.communitypartnering.info) and <https://www.communityeconomies.org/about/community-economies-research-and-practice>
8. Ann Hill and Robert Holmer organised a participatory workshop in Cagayan de Oro City, Mindanao in 2009, as part of Hill’s Growing Community Food Economies in the Philippines PhD project. For further details on the workshop and methodology, see Cameron, J., Gibson, K., and Hill, A., (2014). ‘Cultivating hybrid collectives: research methods for enacting community food economies in Australia and the Philippines’, *Local Environment* 19(1), 118-132. One of the activities required participants to work in groups to construct mind maps of ‘community food economies,’ drawing on examples of food projects they were familiar with. For a detailed example of one of the food projects, see Hill, A., (2015). ‘Moving from “matters of fact” to “matters of concern” in order to grow economic food futures in the Anthropocene,’ *Agriculture and Human Values* 32(3), 551-563.
9. [https://www.researchgate.net/publication/272683169\\_Mapping\\_vegetables\\_-\\_understanding\\_the\\_food\\_system\\_of\\_greater\\_Bangkok\\_Thailand\\_A\\_web-based\\_Collaborative\\_Research\\_Environment#fullTextFileContent](https://www.researchgate.net/publication/272683169_Mapping_vegetables_-_understanding_the_food_system_of_greater_Bangkok_Thailand_A_web-based_Collaborative_Research_Environment#fullTextFileContent)  
  
Drescher, A. W., Holmer, R. J., Glaser, R., Hoschek, M., & Pariyanuj, C. (2015). Mapping vegetables–understanding the food system of greater Bangkok, Thailand: A web-based Collaborative Research Environment. In *Proceedings of the Regional Symposium on Sustaining Small-Scale Vegetable Production and Marketing Systems for Food and Nutrition Security (SEAVEG2014)*, 25-27 February 2014, Bangkok, Thailand (pp. 254-268). AVRDC-The World Vegetable Center.
10. To view a Balubal resident talking about what he was growing at the time of the workshop, visit <https://youtu.be/Vcmdi8Du7tw> .
11. To view two senior high students talking about what they were growing at the time of the workshop, visit <https://youtu.be/Vcmdi8Du7tw> .
12. An example of resources that were shared is <https://www.susana.org/en/knowledge-hub/resources-and-publications/library/details/1126> Philippine allotment garden manual – With an introduction to ecological sanitation, published by the Peri-Urban Vegetable Project in 2008.