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Ang Pagtanom ug Binhi ("The Planting of Seed"): Health implications of food sovereignty movements in the Philippines

Antonia R. G. Alvarez, PhD, LMSW
Portland State University,

Joan Oñate Narciso, PhD, MSc
ETH Zürich,

Sherry Manning
Global Seed Savers,

Karen Lee Hizola
Global Seed Savers, Philippines,

Teresa Ruelas
Communities for Alternative Food EcoSystems Initiative (CAFEi),

Yvonne Chung
Portland State University,

Tatiana Havill, MSW
Portland State University,

Miguel Santos
Portland State University,

Olynn Ara
Portland State University,

Community Advisory Board
Portland State University

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Abstract
Global food sovereignty movements have been defined by their resistance to capitalist and colonial control of food production and land access, with an emphasis on reconnection to traditional and Indigenous ways of knowing, and holistic understandings of the connections between food and health. In the Philippines, these practices have largely been led by smallholder farmers who have fought to gain access to locally produced and regionally appropriate organic seeds through seed

saving processes and technical education. In collaboration with a U.S.- and Philippines-based non-government organizations (NGO) actively involved in food sovereignty movements in the Philippines, the *Ang Pagtanom ug Binhi* [*Binhi*] project identifies the health implications of participating in these movements. Through in-depth interviews and focus groups, the *Binhi* project seeks to understand the perspectives of community providers and stakeholders on approaches to food sovereignty movements in the Philippines, the connections to health participants perceived in food sovereignty movements in the Philippines, and to explore potential strategies for sustainable implementation of practices that support health and well-being. Initial results from this pilot project illuminate opportunities for supporting culture, health, and traditional practices through food sovereignty movements.

Food sovereignty movements were first defined in 1996 by farmers working to disrupt the capitalistic economy through exercising their rights to seeds and land, and encompass acts of preservation, farming, and resistance with a much longer history (see, for example, Scott, 2009). In 2007, the Forum for Food Sovereignty formally declared that food sovereignty is a right, and that all peoples deserve access to healthy, culturally relevant foods through sustainable methods (Mihesuah & Hoover, 2019). Indigenous food sovereignty movements, specifically, are defined by connections to sacred or spiritual practices of relationality and interconnectedness of life, participation and political action, and restorative frameworks that emphasize healing and reconnection (Indigenous Food Systems Network, n.d.; Mihesuah & Hoover, 2019; Whittman, Desmarais & Wiebe, 2010). In the context of the Philippines, these movements are rooted in respect and recognition of the collective right of Indigenous peoples to their Ancestral land and water rights, and the understanding that without access to their lands there can be no food sovereignty as provided under the Indigenous peoples' Rights Act [RA 8371] (Food and Agricultural Organization of the United Nations, n.d.). In collaboration with the United States [U.S]. and Philippines-based NGO and a research team in the U.S., the *Ang Pagtanom Ug Binhi* [*Binhi*] project is a community-based investigation of the connections between food sovereignty movements and health inequities in the Philippines.

This study was prompted by an interest in examining the health-related implications of participating in the food sovereignty movement in the Philippines, outlining the practices that align with health benefits, and, ultimately, demonstrating the feasibility of on-going implementation of those practices. As such, the long-term goal of this project is to support program practices within food sovereignty practices in the Philippines that promote Indigenous knowledge of food and plants as integral to health in the Philippines. The short-term goal of this project is to explore existing practices within food sovereignty movements in the

Philippines and the implications related to health among Filipinos involved in those movements. Due to the iterative nature of data collection in this pilot phase, the *Binhi* project is on-going. As such, this paper describes the culturally grounded approach to the research design as well as initial findings that have emerged throughout the data collection.

Background

The historical and on-going disruption of natural food systems in the Philippines has negative implications on the environmental, cultural, and economic health of Filipinos. Throughout at least the last half century, agricultural innovations have had significant impacts on the food systems in the Philippines (Stone & Glover 2017; Thomas, Pradesha, & Perez, 2015; Yapjoco, 2021). Beginning in the 1970's, the introduction of modern varieties of rice and wheat prompted the "Green Revolution" of Asia, and initiated chemical farming and fertilization processes, pesticide use, and major irrigation system development in the Philippines in an effort to produce higher yields of profitable plants. In addition to quick (however temporary) increases in output, with the Green Revolution came insect infestations, plant-based diseases, and significant environmental changes including erosion, water contamination, and human exposure to chemicals (Hayati & Kikuchi, 1999). Additionally, there were significant costs and inequities of access among small-holder farmers, which has created a legacy of income disparity (Bautista, 1995), loss of Indigenous varieties of rice and other crops, as well as concerns about chemical contamination (New York Times, 1982; Stone & Glover, 2017). Even at the time, these environmental disruptions were predicted to increase food insecurity in coming years. Today, the Philippines is estimated to be the most susceptible country in the world to the impacts and hazards brought on by climate change, according to the 2019 Global Peace Index (Institute for Economics & Peace, 2019).

The Food and Agriculture Organization of the United Nations estimates that 75% of global crop diversity was lost in the decade between 1990 and 2000 (Food and Agricultural Organization, n.d.). Further, it is estimated that nearly 100,000 crop species globally are currently threatened with extinction. Yet, almost 30% of the world's 7.4 billion people rely on food that is produced by smallholder farmers and other food producers (e.g.: swidden agriculture or *kaingin*, see, for example: Suarez & Sajise, 2010; van Vliet, et al, 2012)—those that work less than 2,000 square meters of land. Over 40% of the flowering plants of the Philippines are endemic to the country,

making it one of the most important countries in the world for conserving biodiversity (Critical Ecosystem Partnership Fund, 2001). When considering this, in conjunction with the Philippines' extreme risk for climate change-related hazards and destruction as well as the country's extensive wealth of cultural and "tribal"[1] traditions and peoples, the need to support Indigenous food sovereignty movements is essential.

Due to numerous environmental disasters and these negative impacts of climate change, the agricultural market in the Philippines is at risk (Rosegrant, Perez, Pradesha & Thomas, 2015; Thomas, Pradesha, & Perez, 2015). More than 75 natural disasters affected the Philippines between 2006-2013 (USAID, 2017), greatly impacting agriculture, the gross domestic product [GDP], and the population health of the country. In 2018, the Philippines ranked second (out of nearly 200 countries) on the Global Climate Risk Index (Eckstein, Kürzel, Schäfer & Windes, 2020), marking the significant risks the country faces due to climate change and natural disasters. Agriculture contributes to 14% of the country's GDP, and rice is considered the Philippines' most valuable staple crop. Historically, more than 1,000 varieties of rice were grown in the Philippines, but now only two varieties account for 98% of the rice grown (Global Seed Savers, n.d.). Smallholder farmers in the Philippines do not have access to organic, locally appropriate seeds to diversify their crops.

Philippine food insecurity has been further compounded by the COVID-19 pandemic, during which the government-mandated lockdown has prevented local farmers from sharing and selling their crops, contributing to food waste and lost wages in addition to food scarcity in urban areas (Joseph, 2020). More than half of the population (53%) live in rural areas without access to imported food (International Fund for Agricultural Development, 2016). In 2018, 16.6% (more than 17 million) of the 108 million people in the Philippines was estimated to live in poverty (Asian Development Bank, 2020) and 13% (14 million) of Filipinos do not meet their daily nutritional requirements. There is a 26.8% mortality rate attributed to cardiovascular disease, cancer, diabetes, or chronic respiratory disease.

[1] Quotations marks around the word «tribal» indicate that the term needs to be problematized in the Philippine context, and we hope to engage with on-going discourse about Indigeneity and identity in the Philippines and beyond. See, for example: Eder, 2013; Frake, 2014; Pagulayan, 2016.

Colonial practices and trade influences from China, India, Spain, and the United States have also impacted Filipino connections to and access to Indigenous foods (Fernandez, 1988; Orquiza, 2020). The Philippines is home to an estimated 175 ethno-linguistic "tribal" communities, with an overall Indigenous population estimated between 10 and 20 percent of the 112,508,994 population (World Bank, 2022). The Indigenous Peoples Rights Act (IPRA) provided support for sovereignty among the Indigenous groups in the Philippines (International Work Group for Indigenous Affairs, n.d.), however, farming and food production practices of these Indigenous groups have been consistently undermined through the industrial based farming practices that are driven by (and drive) the global loss in crop diversity (De Vera, 2007). Because of these challenges, the Philippines offers a unique opportunity to witness and learn from environmental and cultural resilience in the midst of economic and health risks.

Literature Review/Theoretical Framework

Food sovereignty provides a framework for holistic, culture-centered approaches to health through food security, economic justice, collective rights to land and resources, and environmental resilience. Food sovereignty movements emerged in the late 1990's as social movements rooted in economic, environmental, and climate justice, as well as in Indigenous sovereignty and land rights (Anderson, 2018). Born of organizing within peasant farmer communities, food sovereignty is a framework that encompasses not only food access, but also access to environmental, economic, and traditional Indigenous resources, including cultural and Indigenous practices (Via Campesina, 2006). Within the food sovereignty framework, "health" can be broadly defined as inclusive of food insecurity, malnutrition, health inequities, and land access (Borras & Mohamed, 2020). Within a food sovereignty framework, even the word "food" can be redefined to explicitly include historical, cultural, social, and political aspects arising from colonial disruptions to traditional and Indigenous practices of food production, consumption, sharing, and reproduction. As such, food sovereignty as a framework for understanding health—particularly in the Philippines, a country that has been so defined by its contribution to the global food market—has great potential (Heckelman & Wittman, 2015).

Food sovereignty movements are guided by principles rooted in community-based and culturally grounded approaches to sustainability, self-determination, and decolonization. The Nyéléni Declaration for Food Sovereignty of 2007 was developed at an international food

sovereignty forum and outlines the six pillars of food sovereignty that have become the underlying principles of the movement worldwide. An Indigenous framework of food sovereignty builds on the existing pillars of food sovereignty movements and puts emphasis on the cultural responsibilities and relationships Indigenous people have with food, plants, and the environment around them. Thus, an Indigenous food sovereignty framework seeks to understand and explore the work being done in communities by local leaders, stakeholders, as well as community members themselves to "restore these relationships through the revitalization of their Indigenous foods and ecological knowledge systems as they assert control over their own wellbeing" (Coté, 2016). There are also important efforts made within this work to understand the gender differences in the division of labor among these communities, and the unique roles that women play in food sovereignty efforts (Brett, 1985; Leroy, 2017).

While there is a growing body of research about the health implications of food sovereignty (Block, 2012; Mihesuah & Hoover, 2019; Weiler, Hergesheimer, Brisbois, Wittman, Yassi & Spiegel, 2015; Whittman, 2010), less is known about the health impacts of food sovereignty movements in the Philippines. The research that does exist shows promising connections between food sovereignty and health benefits for Filipinos. In regards to malnutrition and food scarcity, Mbuya, Demombynes, Piza & Adona (2021) suggest that increased market access can contribute to diversified diets (correlated with positive nutritional outcomes) among Filipinos from households that do not engage in agricultural work, but that increased market access is necessary for families from agricultural households. Altieri, Funez-Monzote & Petersen (2012) report on findings that indicated that Filipino organic farmers had positive environmental outcomes (such as more biodiverse crops), economic outcomes (such as higher yields), and health outcomes (such as higher consumption of fruits and vegetables in their diets and improved health). Due to these multilevel benefits, Altieri et al. (2012) argue that food sovereignty is a critical component of overall resiliency. Among Indigenous communities in the Philippines, specifically, through the assessment of the Ancestral Domains Sustainable Development and Protection Plan (ADSDPP), it is clear that there are significant implications with regards to land/ancestral domain rights and the sustainability of food production and sovereignty (Corazon, 2011). Additionally, Leroy (2017) found that food sovereignty movements in the southern Philippines had positive impacts far beyond agriculture, which included women's empowerment and a larger connection to social justice that addresses power and structural oppression in Filipino families. This aligns

with broader recommendations from Borras & Mohamed (2020), who propose that incorporating health inequity directly into the food sovereignty mission will strengthen the ability of the framework to address the structural and systemic risks associated with food insecurity and food scarcity. As such, the *Binhi* project addresses gaps in the existing research by integrating a health equity lens, as well as including a broader definition of health that accounts for the participant's perspectives related to personal and community-level health outcomes.

Conceptual Model

Guided by a conceptual framework that understands food as inextricably connected to health, the *Binhi* project explores the utility of the Food Systems and Health Disparities conceptual model proposed by Neff, Palmer, McLenzie & Lawrence (2009). This conceptual model depicts a prism of disparities in a social system as it affects the food systems within that social environment. Within the food systems are multiple processes (including food production, affordability, and food supply) that are interconnected with social and cultural factors that affect an individual's access to and interest in a healthy, sustainable diet. The *Binhi* project explicitly focused on the targeted interventions that food sovereignty movements have practiced at the "community food systems" levels, (including through the development of urban gardens and farmers markets), and also at the "other social factors" level, with the integration of tradition and culture into the interventions. Through this framework, the *Binhi* project specifically integrates and amplifies the work of non-governmental organizations [NGOs], grass-roots initiatives, and small-scale food sovereignty efforts that directly impact the health and well-being of their community members. Additionally, the *Binhi* project sought project partners who work within institutions that influence policies in the Philippines to support macro-level advocacy for food sovereignty efforts. These included facilitated discussions about the government response to malnutrition in the Philippines through the introduction of the highly contested "Golden Rice", the unique roles of NGOs in mutual aid and food sovereignty efforts, and concerns about land- and water-rights among Indigenous communities in the Philippines.

Methods

"Ang Pagtanom ug Binhi" means "the planting of seed" in the Filipino language, Bisaya, from the island of Cebu, and is the driving metaphor for the project design, as well as an act of

epistemological resistance, where planting is understood as a cultural activity that resists colonial and industrial control. Building on previous work, the *Binhi* project employed a community driven, culturally relevant approach to research design, data analysis, and results dissemination. The Principal Investigator (PI), a queer, Filipina American scholar based in the United States, joined with three community partners (two who are Filipinas living in the Philippines) who lead Philippine-based NGOs, to form the project Design Team. Through conversations in this Design Team, the project was named *Binhi* as a way of honoring both the focus of the work as well as the scope and nature of the pilot project. Additional members of the Research and Grants Team who supported the project design, development and implementation are employed research assistants and scholars from historically underrepresented communities at the PI's university. Each member of the team has significantly contributed to the writing, thinking, and implementation of the *Binhi* project.

Culturally Grounded Research Approach

Through regular meetings with the Research and Design Team, a culturally responsive approach in the overall project cycle was created, informed by the growth cycle of an endemic plant in the Philippines, the *adlai.* The project cycle (see *Figure 1*) depicts the various phases within the growing and harvesting cycle of the *adlai* plant including planting, germinating & sprouting, growing, flowering, ripening, harvesting and threshing, and seed saving. Grounding the work in this cycle acknowledged the generative, iterative approach to each stage of the research, and provided locally relevant context to the stages of the work.

Relatedly, in the conceptualization of the roles and role differentiation of the different participants in this research project, the team identified the metaphor of the ampalaya (a bitter gourd variety) plant, native to the Philippines and central to Filipino cuisine (see *Figure 2*). This metaphor outlined the roles of the Design Team and Research and Grants teams as similar to the trellis of the plant, providing structure for growth. The CAB was conceptualized as the stem and leaves of the plant, with the central role of providing guidance, context, and interpretation of the findings from the work. The insight and oversight from the Community Advisory Board (CAB) helped ensure that the design, analysis, and dissemination of the research meet the needs of the communities involved, and further ensure cultural relevance of the work. The community providers and stakeholders who participated in the interviews and the focus groups were

conceptualized as the flowers and fruit, whose stories, knowledge and experiences contributed to the bulk of the research findings. By foregrounding the importance of local experts and Indigenous and cultural knowledge about food, plants, land, and health, the *Binhi* project contributes to a decolonial narrative of health in the Philippines. Within a food sovereignty framework that centers around resilience and strength rather than scarcity and risk, this approach facilitates community engagement, empowerment, and data sovereignty.

Research Design

Community-based participatory research [CBPR] is recognized as an important paradigm in creating research projects that address health equity. CBPR bridges science and practice through community engagement and social action, thereby expanding the ability of translational health science research to develop, implement, and sustain strategies aimed at eliminating health disparities in clinical and public health systems and settings (Wallerstein & Duran, 2010). One of the best practices within CBPR is to prioritize engagement of community stakeholders to identify their own priorities and to collaboratively develop and/or adapt established interventions. This priority encourages contributions of culturally supported knowledge and interventions, Indigenous theories, as well as community advocacy within research and intervention design (Wallerstein & Duran, 2010). Throughout the year-long pilot of the Binhi project, the CAB is engaging in on-going review of the *Binhi* pilot to guide the approach and methodologies; to advise on recruitment strategies for stakeholders and community experts; to contextualize and interpret the findings; and to recommend strategies to promote dissemination of findings. The following research questions are addressed: Can food sovereignty address health risks in the Philippines? Can food sovereignty support a culture of health among Filipinos? What aspects of food sovereignty contribute to the health of Filipinos?

Sample and Recruitment

Food Sovereignty Organizer and Expert Focus Groups

Organizers and experts ($n = 10$) within food sovereignty movements were recruited through targeted sampling within existing networks of NGOs and partners working together throughout the Philippines and the United States. Specifically, the CAB included community organizers, scholars, activists, and researchers within food sovereignty movements. Beginning

with program partners, CAB members were recruited through word of mouth and snowball sampling. Eligibility criteria required that each participant is older than 21 years, can speak English, Tagalog, or Cebuano/Bisaya (or the Visayan language), and is active in food sovereignty movements in the Philippines. The CAB members meet throughout the year (currently on-going) for focus group sessions to design and approve the project protocol, to review the initial findings emerging from the data, and to provide feedback and context to the analysis. The focus groups last for up to two hours each, are conducted in English, with simultaneous interpretation in either Tagalog or Cebuano/Bisaya, and each CAB member received an incentive for their year-long participation.

Cultural Practitioner and Community Provider Interviews and Focus Groups.

Cultural practitioners and community providers (*n = 15*) associated with food sovereignty movements in the Philippines were recruited to participate using targeted sampling, an approach that is known to work with "hard-to-reach populations" (Shaghaghi, Bopal, & Sheikh, 2011), with assistance and guidance from the CAB members. Eligibility criteria required that each participant is older than 21 years, can speak English, Tagalog, or Cebuano/Bisaya, and is active in food sovereignty movements in the Philippines. Specifically, these were smallholder farmers, market staff, seed savers, and Indigenous practitioners involved in the direct practices of food sovereignty. One focus group was conducted in English, and the other focus groups and interviews were facilitated by design team members fluent in Tagalog or Cebuano/Bisaya, to support translation of terms and concepts.

Data Collection

The research team gathered consent from the participants, and each participant was given an incentive for participation. In-country members of the research team conducted half of the interviews and focus groups in-person, and the other half conducted the interviews and focus groups using video technology. Participants in the interviews and focus groups reflected on (1) the approaches to food sovereignty movements in the Philippines; (2) the ways food sovereignty practices connect to health for the people involved; (3) potential barriers and facilitators to the food sovereignty movement in the Philippines; and 4) the potential gaps and opportunities for program growth. Thematic analysis of the data helped identify common approaches to the work,

overlapping implications related to health, and potential strategies for implementation.

Data Analysis

After the interviews and focus groups were transcribed, ATLAS.ti (V. 8.0 Mac) software was used for in-depth content analysis. To adhere to rigorous qualitative research standards, the content analyses from interviews and focus groups were triangulated with expert and localized knowledge from the CAB to iteratively inform the data collection and analysis. Overall content analysis of the themes from the CAB and the practitioner interviews and focus groups contributed to the overall findings of the pilot, and continue to contribute to the on-going development of the project.

Considerations for researching with Indigenous People

Connection to and alignment with recommendations from the Free, Prior and Informed Consent (FPIC) for working with Indigenous communities from the UN's manual for project practitioners (Food and Agricultural Organization, 2016) was used to guide our partnerships with Indigenous community members throughout the Philippines. Specifically, in the project formulation phase, numerous discussions to shape and plan the research approach were carried out with the CAB and the Design Team, including how to continue with engagement throughout analysis and dissemination. Additionally, members of the Philippines National Commission on Indigenous Peoples (NCIP) were consulted about the NCIP, which was established by the Philippine government to oversee the implementation of the guidelines from Indigenous Peoples Rights Act (IPRA) for working with the Indigenous groups within the Philippines.

Initial Results

Initial results are based on the completion of more than three quarters of the data collection. Due to the iterative nature of the CAB focus groups, the data collection will not be complete until the final stages of the project, and the members of the CAB and the research team agreed that preliminary results were important and worthwhile to share. Broadly, initial themes include: 1) Complex definitions of "health" and "food sovereignty"; 2) Social, cultural, economic, and health impacts of food sovereignty efforts; and 3) The challenges and opportunities of food sovereignty during COVID-19. These themes have also illuminated the importance of including Indigenous People's voices in food sovereignty work and emphasize the

complexities of defining and enacting food sovereignty within and throughout multiple levels of the food system.

Complex Definitions of "Health" and "Food Sovereignty"

Participants expressed a simultaneous resistance to and an admitted need to discuss and articulate unified definitions of the concept's "health" and "food sovereignty." With regard to defining "health", many participants shared that they believed certain aspects of health—including, for example, spiritual health and nutritional health, might be valued differently by community members. These differences can impact the ways that a community member perceives a particular food, seed, or plant. Some participants discussed that nutritional and physical health, for example, might be less important than spiritual and cultural health. One CAB member shared, "spiritual health may be a better, more common goal than physical health." Another agreed, sharing, "more of the relationship between food and health, at least for us, [is] in terms of mental and spiritual health and the foods that you eat." Many participants agreed, describing the multiple ways that food and plants are ritualized in/among many Filipino cultures and included and/or utilized as part of a spiritual belief system.

Alternatively, or perhaps, connectedly, another participant argued that the separation between farmers and the medical community might in fact contribute to the division and misperceptions of health. She shared:

> In working with farmers and farmers markets, health was not the first focus, which is really interesting. It took a while for medical and health practitioners to come to our markets. There was almost a separation between medical doctors and farmers. Farmers were hesitant to share nutritional value of their products because they were afraid of it not being scientific. Farmers have a lot of stories but do not have a lot of science - they have a different way of scientific understanding.

Differing understanding of health, broadly, and of the specific nutritional, cultural, and spiritual benefits of certain food and plants, may contribute to a community member making connections between health food sovereignty practices.

Similarly, when discussing the definitions of "food sovereignty," many participants reflected on the differences in perceptions of and utility for the term. Some participants argued that conversations about food sovereignty practices should utilize terms and concepts from local dialects/languages, rather than the "buzzwords" associated with the food sovereignty movement.

One CAB member shared that the words food sovereignty might not have as much cultural meaning among Filipinos: "There are many ways that "sovereign" does not really translate." Another said, "it is such a complex, loaded word, I know that I hardly bring it up, especially when I talk to or when I visit the communities."

Several participants shared that they did see potential utility for the term, and shared ways that they have conceptualized food sovereignty in their own lives and work in meaningful ways. "What I like about the word sovereignty is it carries more than our rights, it carries dignities, stewardship… it is like a sacred something that is given to you." The same CAB member continued, sharing the importance of the framework of food sovereignty as an ancestral connection or responsibility:

> Reclaiming in the fullness that it is not just the *right*, but a sense of *I* determine what my place and role and responsibility is. I was given this land, these seeds, to bring forth into the world, to feed people…

Another CAB member suggested that food sovereignty practices can also be seen as acts of resistance and empowerment for small-holder and Indigenous farmers, in particular. He shared: "To me, food sovereignty means the local producers/farmers are empowered to take charge of their land, without being subservient to the monopolistic corporate agricultural practices."
The same CAB member further added that there are educational aspects of the food sovereignty movements in the Philippines that make direct connections between food and health:

> Food sovereignty liberates the local producers from dependency on big corporate agricultural players. For example, most farmers as of now buy their seeds from big companies who have been working on patenting every seed on the planet. Only a few are saving seeds. Perhaps our small efforts in the self-health empowerment movement can inculcate in people's minds that *food as medicine* is an important aspect of people's health. Genetically modified foods and commercial farming are deviations from nature, and any deviation from nature is also a deviation from health.

Additionally, a number of participants reflected on the importance of defining and enacting food sovereignty within and throughout multiple levels of the food system. From food production (seed saving, food growing, food sharing and selling), to consumption (access, affordability, supply), to other aspects of the "Community Food System" (see also: Neff, Palmer, McKenzie & Lawrence, 2009), food sovereignty efforts need to be articulated and aligned. One CAB member, for example, described a program he is involved with:

> [The program] is food sovereignty on a family level, or a community level. We can participate by giving health education seminars to communities, simplifying the complicated jargon of medical science into something that people can easily understand.

Another described the ways she connects different community members who work in the various levels of the food system in her region in the Philippines. She explained,

> My role in the food ecosystem here in [region] is really a gatherer of all the ecosystems stakeholders from farmers and seed savers all the way through. Now we have home cooks and chefs that join us and restaurant owners all the way to customers. I, myself, don't do any of it. So that is why I gather others to do it and help to build their capacity to do it so I can enjoy it now.

Social, Cultural, Economic and Health Impacts of Food Sovereignty Efforts

Another emergent theme from the focus group discussions centered on the multiple types of impact that food sovereignty efforts have in the Philippines. Social, cultural, economic and health impacts were highlighted by participants, although they are not perceived to be the only impacts of food sovereignty efforts. There was overall agreement that these impacts need to be explored with more depth.

Participants reflected on the impacts of food sovereignty efforts in relation to how they conceptualize health. Many described the ways that they were socialized to think of food in relationship to health (or/and to illness) and the ways that they have had to re-learn or challenge some of those narratives. For example, one CAB participant described the ways that fear of diabetes created disparaging narratives about rice in her family of origin. She shared:

> We grew up, we spent happy summers in Pampanga, which is in North Central Luzon where they grew a lot of rice. But also, being from Pampanga, we were told growing up that we would inherit diabetes. It [rice] was pretty much demonized because of the high-glycaemic index, and all that. So, we grew up afraid of inheriting this disease but growing up, we realized that you do not inherit it, you inherit attitudes towards food lifestyles.

Another participant agreed, describing another way that certain narratives of food have important social and cultural impacts. He shared knowledge gained from working among some of the Indigenous communities in the central Philippines:

> There is a big season when they harvest the *nami* [a wild yam] so that they can have food during the rainy season when rice grains cannot augment the lack of food. …Here, some conservationists call it [*nami*] a survival food, but I do not want to call it survival food, because it is actually a regular food that just happens to be eaten, has to be harvested and eaten at a specific time.

According to this CAB member, the cultural and practical importance of this particular crop to the Indigenous communities who grow and consume it is significantly minimized when it is referred to as a "survival food." Part of his work in the food sovereignty effort in the Philippines is to help to restore and articulate these cultural and practical meanings of foods and plants among the many Indigenous Peoples of the region.

Another participant reflected on the importance of claiming or reclaiming the narratives about food and plants in relation to power and empowerment. She said:

> It is not surrendering to others the power to shape the way we eat, our kids will eat, the way we feed the other things around us—the way we feed the chickens, the pigs, the cows, our own pets in the house, the way we feed the soil, all of those things. [Our present] and our future are connected to that power.

The interconnectedness of behaviors and beliefs about food—whether in connection to health of an adult, a child, or the land—were perceived to be important considerations of the food sovereignty efforts in the Philippines. Relatedly, some participants reflected on the source(s) of those beliefs about food and the ways some of those beliefs are not rooted in culture, but potentially in colonization. She argued:

> I think that part of the health system or the food system, not just our colonial history, is also how the way of our thinking has been colonized by food systems external to us. To me, that is personal because of the choices we make, but also because of the choices that are available to us or available to the farmers that we work with.

The food system in the Philippines is not separate from the broader social and historical context of the country and is inclusive of colonial and capitalistic influences as well as food sovereignty efforts.

Relatedly, another important, recurring topic of discussion was the economic challenges related to the food sovereignty efforts and the potential additional social and cultural implications. One participant described the ways that economic need can drive non-organic farming practices regardless of negative social or environmental impacts. Many participants discussed "Golden Rice", as a key example of this concern. Golden Rice is a genetically modified crop that is purported to provide a high level of beta carotene, and it is believed it will address the Vitamin A deficiency among the population (Department of Agriculture, n.d.). Many farmers in the Philippines, however, have protested the use of Golden Rice, citing negative scientific,

environmental, and cultural impacts (McGrath, 2013; Yapjoco, 2021). One participant described her efforts in food sovereignty movements as a way to educate communities about the nutritional value of other Indigenous crops to off-set some of those other (negative) impacts.

> For example, when you introduce Golden Rice, the farmers will say, "Ah-huh," and the consumers will choose Golden Rice. They will stop planting other Indigenous rice varieties because the farmers will think this is an easy source of money, a source of income. When, in fact, that is why I advocate for the nutritional profile analysis of Indigenous crops, because we never know, some Indigenous rice varieties probably have more vitamin A than golden rice; we just did not analyze for it.

Similarly, another CAB member discussed the ways that the impacts of the economy directly affect the health choices of the community members:

> Food sovereignty coupled with simplified health education that is easy to understand is a very good approach I believe. I had some patients who are farmers. They used the money they earn from farming to buy hotdogs, canned foods, processed foods, and when they get sick (hypertension, diabetes), they go to the doctor and ask for a prescription drug, a drug that they will be told to take for the rest of their lives, without realizing that the system is just treating the symptom, not the root cause.

This participant describes the cyclic nature of the decisions that community members are making, and the overlapping impacts of economics, food, and health.

Challenges and Opportunities of Food Sovereignty during COVID-19 in the Philippines

Throughout the COVID-19 pandemic, the Philippines has been under a country-wide lockdown, which has prompted a new crisis of access that prevents farmers from getting their products into the markets and urban centers. Vulnerable communities in the Metro Manila region cannot access healthy foods or vegetables. In response, a food sovereignty partnership was developed with multiple NGOs in the Philippines, including Global Seed Savers Philippines, the Municipality of Tublay, and partner non-profits including Philippines Business for Social Progress, CARE Philippines, PAGASA, and Project Liwanag. Rooted in the local Indigenous Ibaloy practice of reciprocal care and support, the collaborative initiative developed “Project Aduyon: Food Security through Mutual Help”. Through this initiative more than 150 small farmers have been able to contribute food to more than 50,000 families throughout the Northern Philippines, including vulnerable populations in the urban centers (Global Seed Savers, n.d.). One participant described the ways she has seen the community form connections throughout their engagement with the food sovereignty efforts in their region. She shared,

> What we've seen working in the [food sovereignty] project is the sense of community that builds around food preparation, especially in these times because social distancing is still required and must be observed, if possible. Of course, it's challenging for such settlements where they're densely packed in these tiny houses. But it was a chance to come together—the mothers, mostly. Then we distribute healthy food from the donations of the smallholder farmers we work with. They said that it was a chance for them to grow their membership to the cause of land rights and economic rights. It is something that now they continue to do every weekend reaching around 150 families or 400. They talked about their food rights as urban poor. I think that the aspect of community, has been effectively eroded by this pandemic— especially collectivizing and organizing. But food was able to help address that and mitigate the disconnections.

CAFEi, another NGO, emphasizes partnerships with farmers to transport their food products and connect them to a wider market of consumers, including markets and smaller distribution processes through food boxes into urban communities. Further, the Slow Food Movement, an international conservation foundation for biodiversity, has more than 200 active members in the Philippines, with participation in the provinces of Negros, Baguio, Pangasinan, Cebu, and Manila (Lijuaco & Garcia-Reyes, 2017).

> The different kinds of initiatives that we see among food sovereignty organizations (in our case, The Grow It Yourself) in the urban setting have never been thought of. People are always saying when we meet with the community, their first thing is "how can we grow our own food"? "We are in squatter areas, we live on top of each other, there is no space". Now, not only are they growing their own food for consumption, they are growing it to feed others and they are earning income, right? Because now, we are giving them other communities that they can then go and help us feed. They are now our apprentices, in a way. They are teaching other communities because they have lived through it. They can prove that hanging a few pots saves them a lot of money for their own food. The next time there is some crazy lockdown that happens here in [region], they are no longer in a panic because they have their food, right?

Discussion

Food sovereignty in the Philippines takes many forms and is responsive to the knowledge, skills, and needs of the community. As food sovereignty movements continue to gain strength in the Philippines, there is a need for deeper understanding of the approaches to food sovereignty and the efficacy of the framework(s). Rowen White, a renowned food sovereignty practitioner and scholar argues that “the foundation of any durable and sustainable food system is held within the seeds” (White, 2019, 193). Many Indigenous cultures have lost access to the heirloom seeds and plants that are foundational in their cultural foods. The practice of seed saving has been foundational in the Indigenous food sovereignty movement in the United States and connects the

practice of seed saving with the process of reclaiming and understanding a cultural identity (Karp, 2019). The ancestral wisdom of the Philippines, and in particular of the Indigenous People throughout regions of the Philippines, has always included saving and sharing seeds as a way of life and a way of community, but this wisdom is dissipating. During the first seed school in Benguet, the instructor asked the participants who were local farmers and community members: "How many of you remember seeing your parents or grandparents save seeds?" Nearly every participant raised their hand, but none were still practicing seed saving, illustrating that the loss or disconnection from the ancestral practice of seed saving has only occurred in a short, one-to-two generation timespan.

A central theme that recurred throughout the data collection was the importance of including Indigenous People's voices in the food sovereignty efforts in the Philippines. Several participants described their experiences working directly within the Philippines government on the National Commission on Indigenous Peoples (NCIP) to include Indigenous People within the food sovereignty movements. One shared:

> I look back on the policy level working with NCIP, I recall that I filed a resolution, which was approved by the NCIP commission, on food sovereignty… The resolution… was food security as a right, and [created] program in the declaration of ancestral domains as food secure areas… So that was my experience and my first encounter with the words food sovereignty with NCIP.

The same participant shared that the commitment to engaging with, supporting, and preserving Indigenous cultures and food practices is still a paramount goal within the Philippines government. He shared:

> It really excites me that the Indigenous People have reached traditional knowledge on their own traditional farming in which this group really can help those communities preserve those traditions. Because here in the Philippines, it is the obligation of the state to protect, promote, and preserve the cultures and traditions of the Indigenous people, and so I think, with this group, it can really help with those obligations of the government in preserving, promoting, and protecting the traditional knowledge, the heirloom seeds of our Indigenous people.

Conclusion

The *Binhi* project offers a promising approach to understanding the health impacts of food sovereignty movements in the Philippines. Through an exploration of existing food sovereignty practices in the Philippines, this project addresses knowledge gaps that will contribute to the movement's success. Health impacts of participation in food sovereignty

movements in the Philippines have up to this point been largely unclear, but through outlining the practices that most align with health benefits, the long-term goal of this study is to support and sustain elements of food sovereignty movements in the Philippines that directly connect to the culture of health.

Although this project is on-going, the findings contribute to Indigenous health research related to culture and health, as well as to frameworks for culturally responsive community-based research. One participant shared that their hope for the future is that "pharmacies become *farm-acies,*" and it is our hope that this work contributes to continued innovations, motivation, and the pursuit of healing amongst the communities of the Philippines and beyond.

References

Altieri, M.A., Funes-Monzote, F.R., Petersen, P. (2012). Agroecologically efficient agricultural systems for smallholder farmers: Contributions to food sovereignty. *Agronomy for Sustainable Development, 32*, 1-13. DOI 10.1007/s13593-011-0065-6

Anderson, F. (2018) Food sovereignty now! A guide to food sovereignty. European Coordination Via *Campesina*. https://viacampesina.org/en/wp-content/uploads/sites/2/2018/02/Food Sovereignty-A-guide-Low-Res-Vresion.pdf

Asian Development Bank (2020, April). Basic statistics 2020. https://www.adb.org/countries/philippines/poverty

Bautista, R.M. (1995). The Green Revolution in a macroeconomic perspective: The Philippine case. *Trade and Macroeconomics Division*, *4*, International Food Policy Research Institute (IFPRI). https://ideas.repec.org/p/fpr/tmddps/4.html

Block, D. R., Chávez, N., Allen, E., & Ramirez, D. (2012). Food sovereignty, urban food access, and food activism: Contemplating the connections through examples from Chicago. *Agriculture and Human Values*, *29*(2), 203-215. https://link.springer.com/article/10.1007/s10460-011-9336-8

Borras, A. M., & Mohamed, F. A. (2020). Health inequities and the shifting paradigms of food security, food insecurity, and food sovereignty. *International Journal of Health Services*. https://doi.org/10.1177/0020731420913184

Brett, J.P.. (1985) Stone walls and waterfalls: Irrigation and ritual regulation in the Central Cordillera, Northern Philippines. In, Hutterer, K.L., Rambo, A.R., and Lovelace, G.

[Eds] Cultural Values and Human Ecology in Southeast Asia.

Catajan, M.E. (2017, May 11). Tublay seed library to open. *Sun Star Baguio Newspaper.* https://www.pressreader.com/philippines/sunstar-baguio/20170511/281505046136180

Corazon, A. (2011). ADSDPP as roadmap to sustainable future of IP communities. https://www.researchgate.net/publication/283655294_ADSDPP_as_Roadmap_to_Sustainable_Future_of_IP_Communities#:~:text=The%20Ancestral%20Domains%20Sustainable%20Development,human%20and%20cultural%20resources%20based

Coté, C. (2016). "Indigenizing" food sovereignty: Revitalizing Indigenous food practices and ecological knowledges in Canada and the United States. *Humanities*, *5*(3), 57. https://doi.org/10.3390/h5030057

Critical Ecosystem Partnership Fund (2001). The Philippines hotspot: Ecosystem profile. https://www.cepf.net/sites/default/files/final.philippines.ep__1.pdf

Department of Agriculture, Philippine Rice Research Institute [PRRI] (n.d.) *The Golden Rice Project*, https://www.philrice.gov.ph/golden-rice/about-gr/

Eckstein, D., Kürzel, V., Schäfer, L., & Windes, M., (2020). Global Climate Risk Index 2020: Who suffers most from extreme weather events? Weather-related loss events in 2018 and 1999-2018. Briefing paper. *Germanwatch*. www.germanwatch.org/en/cri.

Eder, J.F. (2013). The future of Indigenous Peoples in the Philippines: Sources of cohesion, forms of difference. *Philippine Quarterly of Culture and Society, 41*(3/4), 273-294. https://www.jstor.org/stable/43854732

De Vera, D.E. (2007). Indigneous peoples in the Philippines: A country case study. Presented at the RNIP Regional Assembly, August 20-26, 2007. http://www.iapad.org/wp-content/uploads/2015/07/devera_ip_phl.pdf

FERNANDEZ, D. (1988). Culture ingested: Notes on the indigenization of Philippine food. *Philippine Studies, 36*(2), 219-232. http://www.jstor.org/stable/42633085

Food and Agricultural Organization (n.d.) *Biodiversity to nurture people*. http://www.fao.org/3/v1430e/V1430E04.htm

Food and Agricultural Organization (2016). *Free Prior and Informed Consent: An Indigenous People's right and a good practice for local communities. Manual for project practitioners.* https://www.fao.org/3/i6190e/i6190e.pdf

Frake, C.O. (2014). How to be a tribe in the Southern Philippines during the advent of NGOs

and the invention of The Indigenous. *Human Organization, 73*(3). https://www.jstor.org/stable/44148780

Global Seed Savers (n.d.). *Our COVID-19 response, Aduyon initiative: Food security through mutual help*. https://globalseedsavers.org/covid19philippines/

Hayati, Y., & Kikuchi, M. (1999). The three decades of Green Revolution in a Philippine village. *Japanese Journal of Rural Economics, 1, 010-24.*

Heckelman, A., & Wittman, H. (2015). Food Sovereignty: A framework for assessing agrarian responses to climate change in the Philippines. *ASEAS – Austrian Journal of South-East Asian Studies, 8*(1), 87-94.

Indigenous Food Systems Network (n.d.) *Indigenous Food Sovereignty.* https://www.Indigenousfoodsystems.org/food-sovereignty

Institute for Economics & Peace (2019, June). *Global Peace Index 2019: Measuring Peace in a Complex World, Sydney*. Available from: http://visionofhumanity.org/reports

International Fund for Agricultural Development (2016). Investing in rural people in the Philippines. https://www.ifad.org/documents/38714170/39972509/ph.pdf/f5262a28-0df1-469c-a876-3d2dd1cd4431

Food and Agriculture Organization of the United Nations (2022) Indigenous Peoples Rights Act 1997 (Republic Act No. 8371 of 1997). https://www.fao.org/faolex/results/details/en/c/LEX-FAOC013930/

Joseph, K. (2020, June 18) *Youth-led solutions during COVID-19: The food crisis.* https://blogs.worldbank.org/jobs/youth-led-solutions-during-covid-19-food-crisis

Karp, L.S. (2019, May, 20). How seed saving is repairing a painful past for Native Americans. *Modern Farmer*, https://modernfarmer.com/2019/05/how-seed-saving-is-repairing-a painful-past-for-native-americans/

Leroy, A. (2017, March 2) *Food sovereignty: A feminist struggle? The case of Mindanao, Philippines*. Https://www.cetri.be/food-sovereignty-a-feminist?lang=fr

Mbuya, N.V.N., Demombynes, G., Piza, S.F.A., & Adona, J.V. (6/15/2021). Undernutrition in the Philippines: Scale, scope, and opportunities for nutrition policy and programming. International Development in Focus. World Bank Group. https://www.worldbank.org/en/country/philippines/publication/-key-findings-undernutrition-in-the-philippines

McGrath, M. (2013, August 9). *"Golden rice" GM trial vandalised in the Philippines.* BBC News, *Science*. https://www.bbc.com/news/science-environment-23632042

Mihesuah, D.A., & Hoover, E. (2019) *Indigenous Food sovereignty in the United States: Restoring cultural knowledge, protecting environments, and regaining health*. University of Oklahoma Press.

Neff, R. A., Palmer, A. M., McKenzie, S. E., & Lawrence, R. S. (2009). Food systems and Public Health disparities. *Journal of Hunger & Environmental Nutrition*, 4(3-4), 282–314. https://doi.org/10.1080/19320240903337041

New York Times (original 5/16/1982). Filipinos turn back from Green Revolution. *https://www.nytimes.com/1982/05/16/world/filipinos-turn-back-from-green-revolution.html*

Orquiza, R.A.D. (2020) *Taste of Control: Food and the Filipino colonial mentality under American rule.* Rutgers University Press.

Pagulayan, R.D. (2017). "I am Filipino": Dissecting Filipinoness in the Indigenous Itawis Ethno-Linguistic Community of Northern Luzon, Philippines. *Journal of Undergraduate Research, 2017-2018. http://sites.nd.edu/ujournal/files/2018/05/JUR-17-18-Print-Edition.pdf*

Rosegrant, M., Perez, N., Pradesha, A, & Thomas T. (2015). *The economywide impacts of climate change on Philippine agriculture*. Policy Note 1. Washington DC: International Food Policy Research Institute (IFPRI), http://ebrary.ifpri.org/cdm/ref/collection/p15738coll2/id/129544

Shaghaghi, A., Bhopal, R. S., & Sheikh, A. (2011). Approaches to recruiting 'hard-to-reach' populations into research: A review of the literature. *Health Promotion Perspectives*, *1*(2), 86–94. https://doi.org/10.5681/hpp.2011.009

Stone, G.D., Glover, D. (2017) Disembedding grain: Golden Rice, the Green Revolution, and heirloom seeds in the Philippines. *Agriculture and Human Values*, *34*, 87–102, https://doi.org/10.1007/s10460-016-9696-1

Suarez, R.K. & Sajise, P.E. (2010) Deforestation, swidden agriculture and Philippine biodiversity. *Philippine Science Letters, 3*(1), https://scienggj.org/2010/201012.pdf

Thomas, T. S., Pradesha, A., Perez, N. (2015, September). Agricultural growth and climate resilience in the Philippines: Subnational impacts of selected investment strategies and

policies. *International Food Policy Research Institute (IFPRI)*, Policy Note 2. http://ebrary.ifpri.org/utils/getfile/collection/p15738coll2/id/129543/filename/129754.pdf

United States Agency of International Development [USAID] (2017, February). Climate change risk profile: Philippines. https://www.climatelinks.org/resources/climate-risk-profile-philippines

van Vliet, N., Mertz, O., Heinimann, A., Langanke, T., Pascual, U., Schmook, B., … (2012). Trends, drivers and impacts of changes in swidden cultivation in tropical forest-agriculture frontiers: A global assessment. Global Environmental Change, *22*(2). https://doi.org/10.1016/j.gloenvcha.2011.10.009.

Via Campesina (2006, July 24). Rice and food sovereignty in Asia Pacific. La Via Campesina, International Peasant Movement. https://viacampesina.org/en/wp content/uploads/sites/2/2006/07/2006_07_13_Rice_and_Food_Sovereignty_in_Asia_Pac i fic.pdf

Wallerstein, N., & Duran, B. (2010). Community-based participatory research contributions to intervention research: The intersection of science and practice to improve health equity. *American journal of public health*, *100*(Suppl 1), S40–S46. https://doi.org/10.2105/AJPH.2009.184036

Weiler, A. M., Hergesheimer, C., Brisbois, B., Wittman, H., Yassi, A., & Spiegel, J. M. (2015). Food sovereignty, food security and health equity: A meta-narrative mapping exercise. *Health policy and planning*, *30*(8), 1078-1092. https://doi.org/10.1093/heapol/czu109

White, R. (2019) Planting sacred seeds in a modern world: Restoring Indigenous seed sovereignty. In D. A. Mihesuah & E. Hoover (Eds.), *Indigenous food sovereignty in the Unites States: Restoring cultural knowledge protecting environments and regaining health*, 186-197. University of Oklahoma Press.

Whyte, K.P. (2019) Indigenous climate justice and food sovereignty: Food, climate, continuance. In D. A. Mihesuah & E. Hoover (Eds.), *Indigenous food sovereignty in the Unites States: Restoring cultural knowledge protecting environments and regaining health*, 320-334. University of Oklahoma Press.

Wittman, H., Desmarais, A., & Wiebe, N. (2010). The origins and potential of food sovereignty. *Food sovereignty: Reconnecting food, nature and community*, 1-14. https://foodfirst.org/wp-content/uploads/2014/01/Food-Sovereignty_INTRO_Origins

Potential-of-Food-Sov.pdf

Yapjoco, P.B. (2021, April 13). *Grains of truth: Why the war on Golden Rice is far from over.* UPLB Perspective. https://uplbperspective.org/2021/04/13/grains-of-truth-why-the-war on-golden-rice-is-far-from-over/

Figure 1.
Binhi Project Cycle

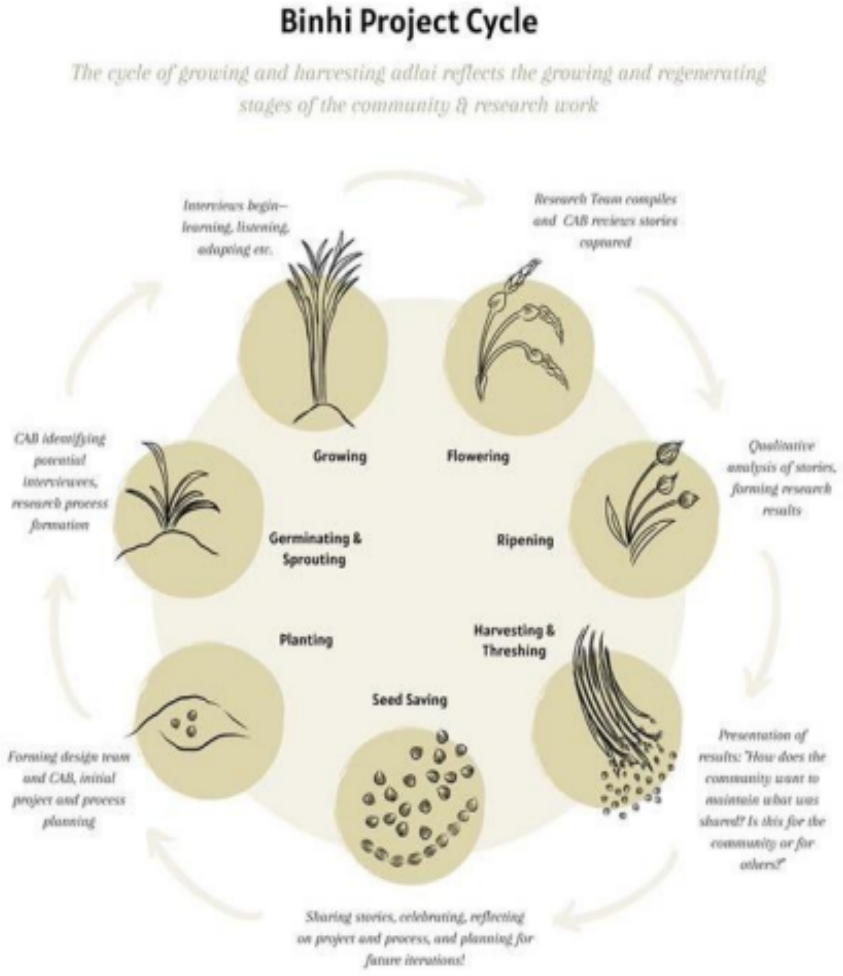

Figure 2.
Binhi Project Roles, Modified from original by Blanco (O.S.A.), Flora de Filipinas