Assessment of the Innovation Capacity of Community Food Farm in Barangay Bitaug and Barangay Cangcohoy of Siargao Island, Philippines

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ABSTRACT

This study assessed the innovation capacity of Community Food Farms (CFFs) established by Gawad Kalinga in Barangay Bitaug and Barangay Cangcohoy, Siargao Island, Philippines. Using a descriptive research design, data were collected from 19 participants through a structured survey instrument measuring five innovation capacity dimensions: navigating complexity, collaboration, reflection and learning, engagement in strategic and political processes, and technical skills. Descriptive statistics (mean and standard deviation) and Coxcomb plot visualizations were used for analysis.Findings indicate moderate to high levels of innovation capacity across all five dimensions, with particularly strong performance in collaboration and technical skills. Participants demonstrated effective problem-solving, stakeholder engagement, and adaptive learning practices. Comparative analysis further revealed variation in capacity levels based on education and gender, suggesting the need for tailored capacity-building interventions.The study concludes that Community Food Farms in Siargao possess foundational innovation capacities that contribute to sustainable community development and resilience. Strategic investments in structured training, stakeholder coordination, and institutionalized monitoring systems are recommended to strengthen long-term impact.

Keywords: innovation capacity, community food farms, Gawad Kalinga, community development, organizational learning, Siargao

INTRODUCTION

Community-based agricultural initiatives play a vital role in strengthening food security, income diversification, and social cohesion in vulnerable communities. In the Philippines, the Gawad Kalinga Community Development Foundation has implemented Community Food Farms (CFFs) to promote sustainable food production and community resilience.

In Siargao Island, particularly in Barangay Bitaug (Municipality of Burgos) and Barangay Cangcohoy (Municipality of Del Carmen), CFFs were established to address post-disaster recovery, food insecurity, and livelihood restoration following Super Typhoon Odette. These initiatives operate through collective action, volunteer engagement, and community-based enterprise models.

Despite the expansion of CFFs nationwide, limited empirical research has assessed their innovation capacity—defined as the ability to mobilize skills, collaborate effectively, adapt to challenges, and engage in strategic processes for sustainable development. This study addresses that gap by systematically evaluating the innovation capacity of CFFs in two barangays of Siargao Island.

OBJECTIVES OF THE STUDY

General Objective

To assess the innovation capacity of Community Food Farms in Barangay Bitaug and Barangay Cangcohoy, Siargao Island.

Specific Objectives

1. To determine the capacity to navigate complexity.
2. To evaluate collaboration capacity.
3. To assess reflection and learning capacity.
4. To examine engagement in strategic and political processes.
5. To evaluate participants' technical skills.
6. To analyze how innovation capacity varies across selected demographic characteristics.

Theoretical Framework

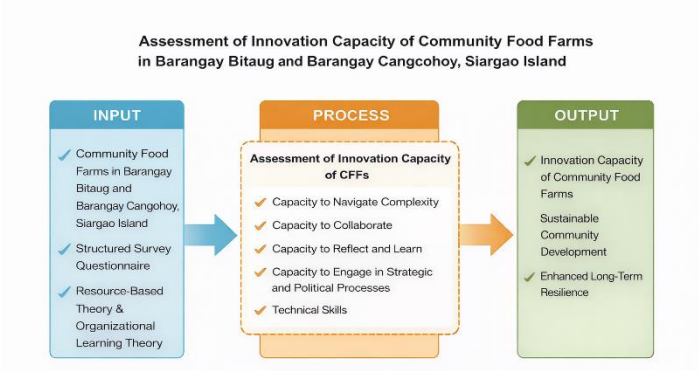


Figure 1. Theoretical Framework of the Stud

THEORETICAL LENS

This study is anchored on three complementary theoretical perspectives:

Human Capital Theory (Becker, 2009)

This theory emphasizes that education, training, and skill development enhance productivity and organizational performance. Technical competencies within CFFs are interpreted as investments in human capital that contribute to sustainability.

Resource Dependence Theory (Pfeffer & Salancik, 2003)

Organizations depend on external actors for critical resources. Collaboration capacity reflects the ability of CFFs to secure partnerships and reduce environmental uncertainty.

Organizational Learning Theory (Senge, 1990)

Sustainable organizations continuously learn, reflect, and adapt. Reflection and learning capacity demonstrate adaptive resilience.

METHODOLOGY

Research Design

A descriptive research design was employed to measure existing innovation capacity levels across five dimensions.

Research Locale

The study was conducted in Barangay Bitaug (Burgos) and Barangay Cangcohoy (Del Carmen), Siargao Island, Philippines.

Participants

Nineteen (19) active CFF members were included through complete enumeration sampling.

Research Instrument

A structured survey instrument measured five innovation capacity dimensions using numerical scoring. Demographic data were also collected.

Statistical Analysis

Data were analyzed using frequency, percentage, mean, and standard deviation. Coxcomb plots were used to visually compare capacity dimensions.

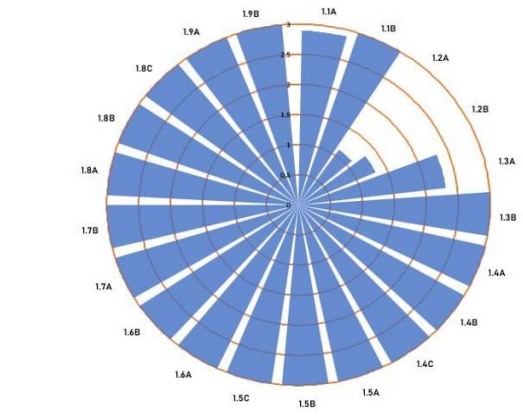
RESULTS AND DISCUSSION

Table 1. Demographic Profile (Summary)

Variable	Dominant Category	Percentage
Gender	Female	63%
Age	40–55 years	63%
Profession	Farmers	85%
Experience	< 3 years	100%

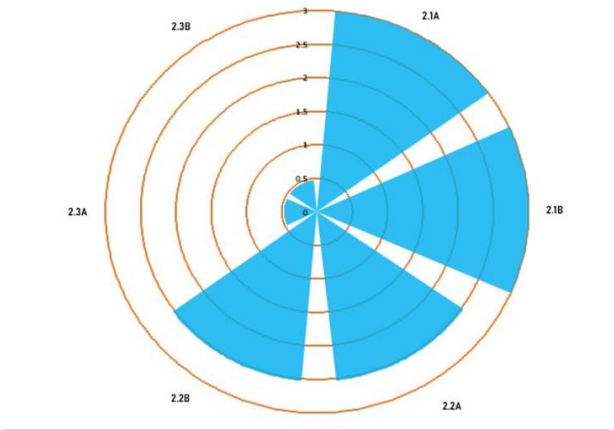
The demographic profile indicates that the majority of respondents are **female (63%)** and are primarily within the **40–55 age group (63%)**, suggesting that middle-aged women play a significant role in the Community Food Farm initiatives. Most participants are **farmers (85%)**, reflecting strong agricultural involvement and practical field experience. Additionally, all respondents have **less than three years of experience (100%)**, indicating that the partnership is relatively new but actively composed of engaged members who are in the early stages of organizational development.

Figure 1. Coxcomb Plot of data collected in the Capacity to Navigate Complexity



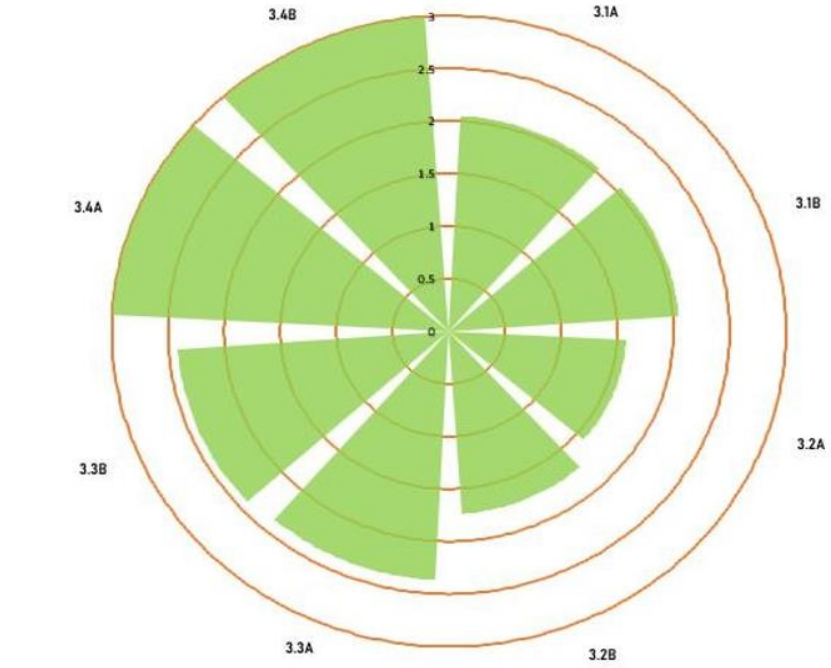
The Coxcomb plot shows that Gawad Kalinga in Barangay Bitaug and Barangay Cangcohoy demonstrates a **moderate to high capacity to navigate complexity**. This includes strong problem-solving skills, effective management, resource mobilization, information sharing, and sound decision-making. These findings suggest that the organization is capable of addressing community challenges efficiently. Consistent with Barney and Clark (2007), the ability to effectively utilize internal resources and capabilities strengthens organizational performance and supports sustained community impact.

Figure 2. Coxcomb Plot of data collected in the Capacity to Collaborate



This indicates that Gawad Kalinga in Siargao has a **strong** capacity for collaboration, demonstrated through stakeholder representation, cooperation, and networking initiatives. This suggests active engagement with community members, local government, and partner organizations. Consistent with Pfeffer and Salancik (2003), collaboration enables access to external resources and strengthens sustainable community development.

Figure 3. Coxcomb Plot of data collected in the Capacity to Reflect and Learn



The results indicate that Gawad Kalinga in Siargao has a **moderate to high capacity for reflection and learning**, demonstrating openness to continuous improvement, experimentation, and collective learning. Effective documentation and monitoring practices further support informed decision-making and adaptation. Consistent with Crossan and Apaydin (2010), reflective practices enhance knowledge development and strengthen long-term organizational resilience.

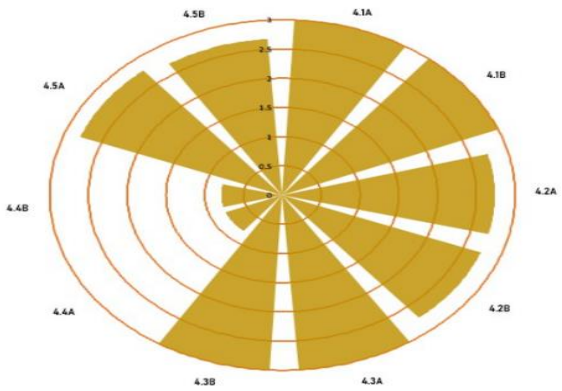
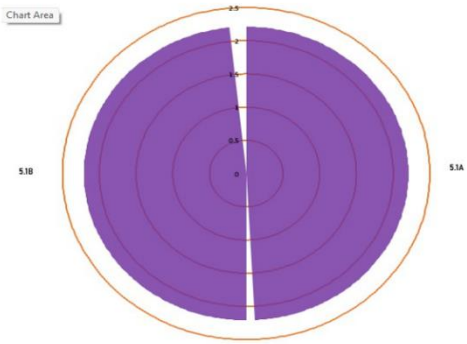


Figure 4. Coxcomb Plot of data collected in the Capacity to Engage in Strategic and Political Processes

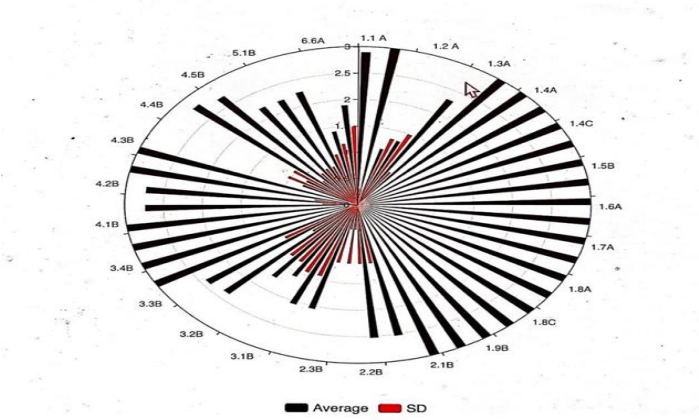
The results show a strong capacity to engage in strategic and political processes, including leadership, policy awareness, decision influence, and effective communication. Participants are informed about agricultural development issues and actively involved in strategic actions. Consistent with Pfeffer and Salancik (2003), this capacity enables the organization to secure resources and strengthen its impact through engagement with external stakeholders.

Figure 5. Coxcomb Plot of data collected in the Technical Skills



The high average score indicates that Gawad Kalinga in Siargao possesses strong technical skills, enabling effective planning, implementation, and management of community projects. Consistent with Human Capital Theory (Becker, 2009), investments in education and training enhance productivity and organizational performance. These technical competencies strengthen the organization's capacity to deliver sustainable community development initiatives.

Figure 6. Coxcomb Plot base on average and SD of the data collected during the survey in the 2 Identified Barangays of Siargao Island



The findings show that Gawad Kalinga in Siargao demonstrates moderate to high capacity in navigating complexity, including problem-solving, management, resource access, and decision-making. The organization also exhibits a strong capacity for collaboration, characterized by stakeholder cooperation and networking. Results indicate a moderate to high ability for reflection and learning, supported by training, experimentation, and monitoring practices. Additionally, there is a good capacity for strategic and political engagement, including leadership and policy awareness. Finally, the high average score in technical skills reflects strong overall technical competency in implementing community initiatives.

CONCLUSION

Community Food Farms in Barangay Bitaug and Barangay Cangcohoy demonstrate moderate to high innovation capacity across five critical dimensions. Strong collaboration and technical skills provide a solid foundation for sustainable agricultural enterprise development. However, capacity variations across education levels suggest the need for structured and inclusive training programs.

Overall, the CFF model in Siargao shows potential as a replicable framework for community-based innovation in post-disaster and rural contexts.

RECOMMENDATIONS

Institutionalize Quarterly Multi-Stakeholder Forums

Responsible: Gawad Kalinga Leadership

Timeline: Within 6 months

Indicator: Increased documented partnerships

Develop Structured Capacity-Building Modules

Responsible: SEED Program Coordinators

Timeline: 1 year

Indicator: Pre- and post-training improvement scores

Establish Bi-Annual Innovation Capacity Monitoring

Responsible: Community Food Organizer

Indicator: Progressive increase in mean capacity scores

Target Education-Sensitive Interventions

Provide focused technical and leadership training for participants with lower formal education backgrounds.

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