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BIMP-EAGA VISION 2025 AND SUBREGIONAL COOPERATION FOR FOOD SECURITY IN MINDANAO

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Abstract

Mindanao, a key agricultural region in the southern Philippines, is increasingly vulnerable to climate-induced food crises. Recent hydro meteorological disasters, notably floods, have caused crop failures across more than 20,000 hectares of rice fields and 8,800 hectares of staple crops, threatening local food supply stability. These challenges are compounded by limited human resource capacity in agricultural sectors and fragmented domestic policy responses. Within this context, the BIMP-EAGA Vision 2025 offers a strategic platform for sub regional cooperation, aiming to strengthen food security through climate adaptation strategies, agricultural technology transfer, and regional trade facilitation. This study employs a qualitative approach and policy analysis to examine the mechanisms through which BIMP-EAGA contributes to mitigating the food crisis in Mindanao. Three focus areas are analyzed the establishment of a food security corridor to stabilize commodity supply chains, capacity building for farmers through cross-border knowledge and technology exchange, and mobilization of agricultural infrastructure funding within the Vision 2025 framework. The findings reveal that BIMP-EAGA's cooperative initiatives have enhanced access to regional food reserves and facilitated cross-border trade, reducing the immediate impacts of crop failures. However, implementation remains constrained by disparities in resource allocation, institutional coordination gaps, and policy misalignments between member states. This study addresses a significant research gap by providing an in-depth analysis of how Vision 2025 operationalizes food security measures at a sub-regional scale, offering insights into policy harmonization for climate-resilient agriculture in Southeast Asia.

Keywords*: BIMP-EAGA Vision 2025; Food Security; Human Capital Development; Mindanao; Sub regional Cooperation*

INTRODUCTION

Mindanao, located in the southern Philippines, is recognized as one of the country's primary agricultural hubs, producing significant portions of rice, corn, and other staple crops that are critical for national and regional food supply. However, this strategic position is increasingly threatened by recurrent hydro meteorological disasters, particularly floods, which have caused severe agricultural losses. Official government data reported crop failures across 20,000 hectares of rice fields and 8,800 hectares of staple crops, resulting in disruptions to food availability, rising market prices, and heightened vulnerability of rural communities. These problems are made worse by climate and eco-system shocks, as well as by an over-low capacity of human resources in agriculture, underdeveloped infrastructure, and patchy policies on a national and regional scale. The island is of great importance in world geography and international relations because of its closeness to Northern Indonesia and Malaysia. It also happens to be the second largest island in the Philippines after Luzon. The island is estimated to be 471 kilometers from north to south and 521 kilometers from east to west, highlighting its vast geographic scope and demographic diversity. Mindanao is divided into 25 provinces and 6 main regions: Zamboanga Peninsula (Region IX), Northern Mindanao (Region X), Davao Region (Region XI), Soccsksargen (Region XII), Caraga (Region XIII), and the Autonomous Region in Muslim Mindanao (ARMM). Mindanao's geographical division reflects the island's socio-political and cultural diversity which is rich in natural locations and is home to various

ethnic and religious groups. Mindanao has challenges in food security that stem from natural disasters. The island's tropical climate allows it to receive rainfall consistently throughout the year alongside warm temperatures, and high levels of humidity. These climate conditions, coupled with the region's socio-economic situation, have severe impacts on the local livelihoods agricultural activity and biodiversity. Based on the Philippine's civil registry data, Mindanao has approximately 26 million people making it one of the most densely populated regions. The region's largest urban center, Davao city has about 1.7 million residents. It is also home to Zamboanga city which is a major economic, social, and industrial center with a population of over one million. Some other notable urban areas include Butuan, Cotabato, and General Santos also contribute significantly to the island's socio-economic development.

Food security concerns in Mindanao have become increasingly alarming. In 2021, nearly 70% of households reported being unable to afford a healthy diet, while approximately 33% experienced food insecurity. This has led to high rates of malnutrition, exacerbated by limited dietary diversity and inadequate feeding practices, particularly among children and women of reproductive age. In the 2022 Global Hunger Index, the Philippines ranked 69th out of 121 countries, indicating a moderate level of hunger, yet the country continues to grapple with the double burden of rising obesity rates alongside under nutrition. Surveys indicate a growing hunger trend, with 14.2% of households reporting involuntary hunger in the first half of 2024—the highest rate since May 2021. According to the latest data from the World Food Programme (WFP), 10% of Filipino households experience food insecurity. In the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM), 61.3% of the population lives in extreme poverty, and over 30% face food insecurity. Non-agricultural households are reported to be 25% more likely to experience food insecurity compared to agricultural households. Nationally, the number of food-insecure Filipinos rose from 44.9 million in 2014–2016 to 59 million in 2019, underscoring a worsening trend in recent years.

Figure 1: Map of Primary Conflict Area

The Philippine government has shown a strong commitment to ensuring food security for its most vulnerable populations. This is evident in state-led food aid responses, supported by international organizations such as the World Food Programme (WFP), which have delivered mass food assistance to hundreds of thousands of internally displaced persons (IDPs) in Mindanao. Moreover, peace negotiations with the Moro Islamic Liberation Front (MILF) have been a key strategy to address the root causes of displacement, with the hope of restoring stability and enabling IDPs to rebuild their lives.

Figure 2: WFP Country Strategy

Based on figure 2, WFP Country Strategy show that Country Strategic plan 2024-2028 there is a total requirement of 131.19 M US$, the allocated contribution is 21.72 M US$ and in six months the Net Funding Requirement reaches 4.22 M US$. The World Food Programme (WFP) is working together with the Philippine government to develop the Philippines Country Strategic Plan for 2024–2028. This plan aims to strengthen resilience against shocks, ensure rapid emergency responses, and promote nutrition-focused social protection programs. Its overarching goal is to build robust food systems that guarantee fair, reliable access to food for all citizens, while addressing the growing pressures of climate change. To respond to these vulnerabilities, the Brunei–Indonesia–Malaysia–Philippines East ASEAN Growth Area (BIMP-EAGA) serves as a key sub regional platform for fostering economic cooperation. Guided by the Vision 2025 framework, it sets long-term objectives for sustainable development, trade facilitation, and resilience building. Within this framework, food security emerges as a cross-cutting priority, closely linked to climate adaptation, agricultural modernization, and human capital development. The cooperative measures outlined—such as creating a regional food security corridor, advancing agricultural technology transfer, and encouraging cross-border investment in infrastructure offer promising pathways to mitigate the impact of agricultural crises in Mindanao.

However, turning Vision 2025 into action remains challenging. Policy fragmentation among member states, uneven resource allocation, and the limited integration of climate adaptation into agricultural strategies continue to weaken the impact of joint initiatives. While previous studies have explored BIMP-EAGA's role in promoting regional trade and investment, there is still a notable gap in examining its contributions to food security particularly in climate-vulnerable areas like Mindanao. Empirical evidence on how Vision 2025 translates into concrete measures for agricultural resilience through cross-border cooperation is also limited. This study seeks to address that gap by assessing how BIMP-EAGA Vision 2025 advances food security in Mindanao through sub regional collaboration. It focuses on three main areas: first, the creation of a food security corridor to stabilize commodity supply chains; second, capacity building for farmers via agricultural technology transfer; and third, financing agricultural infrastructure in line with climate adaptation needs. By doing so, the research provides both theoretical insights and policy recommendations on how sub regional platforms can tackle food insecurity in Southeast Asia's climate-sensitive regions.

LITERATURE REVIEW

This study is guided by three interconnected theoretical perspectives such as regionalism theory, food security frameworks, and climate adaptation governance. First, new regionalism theory suggests that sub regional groupings emerge not only as economic alliances but also as mechanisms for addressing shared vulnerabilities through collective action. The BIMP-EAGA framework reflects this view, serving as a platform that integrates economic development goals with strategies for building resilience. Second, the FAO's food security framework outlines four key dimensions—availability, access, utilization, and stability. In Mindanao, hydro-meteorological hazards primarily threaten availability and stability, while policy and institutional weaknesses hinder access and

utilization. Third, the adaptive governance approach in climate change scholarship underscores the value of polycentric, flexible, and learning-oriented institutions in tackling complex environmental challenges. BIMP-EAGA's multi-country, multi-level governance structure embodies both the opportunities and constraints of implementing adaptive responses to climate-related food insecurity.

BIMP-EAGA and Subregional Cooperation

Established in 1994, the BIMP-EAGA initiative was designed to accelerate economic development in less-developed, geographically distant, and resource-rich areas of Brunei Darussalam, Indonesia, Malaysia, and the Philippines. Academic literature (Manguin, 2019; Rimmer & Dick, 2020) highlights its role in enhancing connectivity, trade, and investment. However, scholars such as Caballero-Anthony (2016) note persistent challenges in translating cooperative frameworks into tangible development outcomes due to disparities in institutional capacity and policy alignment among member states.

Food Security in Mindanao

Mindanao contributes over 40% of the Philippines' total food production, yet remains highly vulnerable to climate shocks. Studies by Habito & Briones (2021) reveal that agricultural losses from floods and droughts have recurrently disrupted the regional supply chain, increasing food prices and undermining livelihoods. Policy interventions have often been reactive rather than preventive, with limited integration of climate adaptation strategies into agricultural planning.

Climate Change and Hydro Meteorological Risks

Hydro meteorological hazards such as typhoons, monsoon floods, and El Niño-induced droughts pose significant threats to agricultural sustainability in Southeast Asia (Yusuf & Francisco, 2009). In Mindanao, these hazards are intensified by deforestation, watershed degradation, and inadequate irrigation infrastructure. According to the IPCC (2022), effective adaptation depends on multi-scalar cooperation that connects local initiatives with broader national and regional frameworks.

BIMP-EAGA Vision 2025 and Policy Integration

BIMP-EAGA Vision 2025 explicitly identifies food security and climate change adaptation as cross-cutting priorities within its Green and Inclusive Growth pillar. Reports from the Asian Development Bank (2021) suggest that the Vision offers a promising platform for joint research, technology transfer, and coordinated disaster risk management. However, there is a lack of empirical research that directly evaluates the Vision's impact on sub regional food security, creating a significant gap in understanding its practical effectiveness.

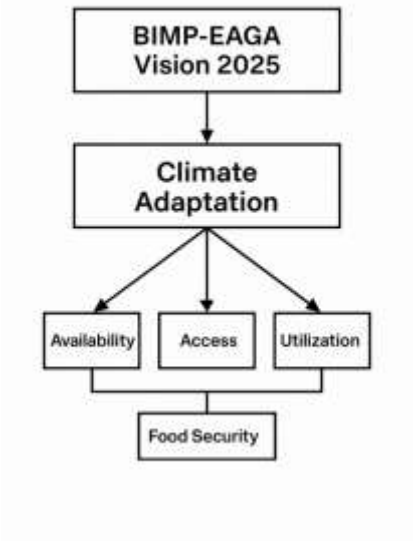

Figure 3: Conceptual Framework Diagram BIMP-EAGA Vision 2025,
Food Security Dimensions, And Climate Adaptation Pathways

The conceptual framework presented in Figure 3 illustrates the relationships between BIMP-EAGA Vision 2025, the dimensions of food security, and the climate adaptation pathways that shape subregional resilience in Mindanao. At its core, BIMP-EAGA Vision 2025 functions as the overarching strategic framework, prioritizing regional integration, sustainable economic growth, and resilience building. This vision drives policy alignment, cross-border collaboration, and investment mobilization, which collectively strengthen the stability of food systems in the sub region. The framework connects Vision 2025 to the key dimensions of food security availability**,** by ensuring an adequate food supply through improved agricultural productivity, diversification, and sustainable fisheries; and access**,** by enhancing market connectivity, reducing logistical barriers, and promoting equitable distribution across both rural and urban communities. Utilization promoting nutrition-sensitive agriculture, food safety standards, and value chain efficiency. And stability that will building resilience against seasonal variability, economic shocks, and supply chain disruptions.

Surrounding these dimensions are the climate adaptation pathways, which function as enabling mechanisms to safeguard food security under changing environmental conditions. These include climate-resilient agricultural practices such as drought-tolerant crops and integrated water management, disaster risk reduction and management to mitigate the impacts of floods, droughts, and storms, ecosystem-based adaptation to maintain coastal and watershed health, supporting fisheries and agriculture and also cross-border knowledge sharing on climate-smart innovations and policy best practices. Overall, the diagram demonstrates that achieving food security in Mindanao under the BIMP-EAGA framework is not only a matter of boosting productivity but also ensuring that policies, infrastructure, and climate resilience measures are integrated across national and sub regional levels. The feedback loop between food security outcomes and adaptation pathways underscores that resilient food systems contribute to the long-term success of BIMP-EAGA Vision 2025. Existing scholarship underscores that while BIMP-EAGA provides a strategic framework for addressing food security and climate resilience, its success depends on overcoming coordination gaps, resource asymmetries, and policy fragmentation. There is a need for deeper empirical investigation into how Vision 2025 initiatives are implemented on the ground in Mindanao, and how they interact with both national agricultural policies and local adaptation practices.

METHOD

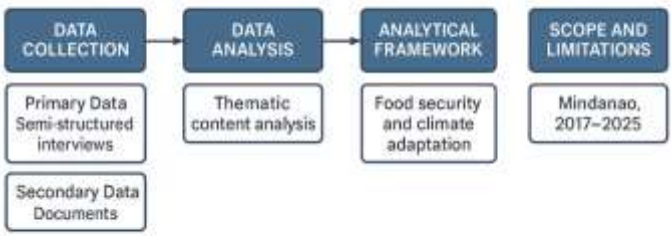

Figure 4: Methodological Framework Diagram

This study adopts a qualitative research design, combining descriptive and analytical approaches to examine the role of BIMP-EAGA Vision 2025 in enhancing food security in Mindanao within the context of climate adaptation. The research relies on document analysis, complemented by key informant interviews, to provide a comprehensive understanding of sub regional cooperation mechanisms and their practical outcomes. Primary data was obtained through semi-structured interviews with policymakers, agricultural experts, and representatives from relevant BIMP-EAGA working groups. These interviews explored perceptions, implementation strategies, and challenges related to Vision 2025's food security agenda. Secondary data was gathered from official BIMP-EAGA publications, policy briefs, statistical reports from the Philippine Statistics Authority (PSA), the Department of Agriculture (DA), and the Food and Agriculture Organization (FAO), as well as peer-reviewed journal articles. The data analysis followed a thematic content analysis approach. Interview transcripts and documentary materials were coded to identify recurring patterns related to the strategic alignment between Vision 2025 and food security goals. Climate adaptation measures embedded within sub regional

cooperation and institutional and resource-related challenges in implementation. The study applies a conceptual framework linking the three core dimensions of food security availability, accessibility, and stability with the climate adaptation pathways outlined in Vision 2025. This framework enables an integrated assessment of policy coherence, resource mobilization, and operational effectiveness within the sub regional cooperation setting. The research focuses on Mindanao as a critical food-producing region in the southern Philippines and limits its analysis to the period between 2017 and 2025, aligning with the official timeline of Vision 2025. While the study provides in-depth qualitative insights, the findings are context-specific and may not be generalizable to other regions within BIMP-EAGA.

RESULTS AND DISCUSSION

Progress Towards BIMP-EAGA Vision 2025 in Mindanao

The findings indicate that Mindanao has made incremental progress in aligning its development strategies with the BIMP-EAGA Vision 2025 targets. Key achievements include improved maritime connectivity between Mindanao and other BIMP-EAGA growth centers, increased investment in agribusiness, and strengthened cross-border trade in fisheries and agricultural commodities. However, the pace of progress remains uneven, with infrastructure bottlenecks, regulatory disparities, and governance challenges limiting the full realization of sub regional cooperation benefits. The BIMP-EAGA Vision 2025 (BEV 2025) outlines strategic targets aimed at promoting sustainable, inclusive, and resilient economic growth across the sub region, with a strong emphasis on connectivity, environmental sustainability, trade facilitation, and people-to-people linkages. In the context of Mindanao, these targets align closely with the island's long-term development priorities as outlined in the Mindanao Strategic Development Framework 2020–2030. This alignment is most evident in three key areas:

1. **Economic Growth and Connectivity**

   BIMP-EAGA Vision 2025's focus on improving transport and trade connectivity directly complements Mindanao's infrastructure development agenda, particularly in upgrading port facilities, road networks, and logistics corridors. This synergy reinforces Mindanao's ambition to position itself as a strategic gateway for inter-island and cross-border trade, especially with Eastern Indonesia and other BIMP-EAGA economies.

2. **Sustainable Resource Management**

   Both BIMP-EAGA Vision 2025 and Mindanao's development plans underscore the importance of sustainable natural resource management. Mindanao's initiatives in sustainable fisheries, agro-industrial modernization, and climate-resilient agriculture align closely with Vision 2025's objectives for advancing the blue economy and promoting environmental stewardship.

3. **Social Inclusion and Human Capital Development**

   BIMP-EAGA Vision 2025 promotes inclusive growth by prioritizing poverty reduction, gender equality, and skills development. This mirrors Mindanao's commitment to reducing socio-economic disparities, particularly in conflict-affected areas, and to expanding access to education, healthcare, and livelihood opportunities. Overall, the alignment between BEV 2025 targets and Mindanao's development trajectory enhances policy coherence, maximizes the impact of sub regional cooperation, and positions Mindanao as a key contributor to the realization of BIMP-EAGA's collective goals. This synergy is crucial for addressing shared challenges such as food security, climate change adaptation, and equitable economic growth. The following is the alignment of BIMP-EAGA vision 2025 targets with Mindanao's development progress:

Table 1. Alignment of BIMP-EAGA Vision 2025 Targets with Mindanao's Development Progress

BIMP-EAGA Vision 2025 Target	Progress in Mindanao	Key Challenges Identified
Enhanced connectivity and trade corridors	Moderate progress	Infrastructure gaps in rural ports
Sustainable fisheries and marine resource management	Partial progress	Weak enforcement of coastal protection laws
Agribusiness development and value chain integration	Moderate progress	Limited cold storage and logistics support
Inclusive growth and community participation	Limited progress	Marginalized groups underrepresented

Food Security Dimensions in the BIMP-EAGA Context

In the BIMP-EAGA framework, food security is understood through four interrelated dimensions such as availability, accessibility, utilization, and stability**.** Mindanao's performance in each dimension reflects both its potential as a major food-producing region and the persistent structural challenges that affect its integration into the sub regional food system. There are analysis of the four dimensions of food security reveals a complex picture:

Table 2. Status of Food Security Dimensions in Mindanao (BIMP-EAGA Context)

Dimension	Current Status	Opportunities through BIMP-EAGA Cooperation
Availability	Growth in high-value crops and fisheries, but climate risks threaten stability	Technology transfer for climate-smart agriculture
Access	Improved market access in some provinces, but rural isolation remains	Regional transport integration
Utilization	Gradual improvements in nutrition and food safety	Halal certification boosting food quality
Stability	Vulnerable to price volatility and extreme weather	Regional early warning systems

Climate Adaptation Pathways and Resilience Building

In the context of BIMP-EAGA cooperation, Mindanao's climate adaptation pathways focus on building resilience against environmental stressors that directly affect agricultural productivity, fisheries sustainability, and rural livelihoods. These pathways integrate local, national, and regional strategies to address both immediate climate risks and long-term environmental shifts. The study identifies three primary climate adaptation pathways being implemented in Mindanao:

Table 3. Climate Adaptation Pathways in Mindanao

Pathway	Key Actions Implemented	Limitations
Climate-resilient agriculture	Drought-resistant varieties, agroforestry, integrated pest management	Limited access to inputs and credit
Ecosystem-based adaptation	Mangrove restoration, watershed protection	Land use conflicts, slow community uptake
Disaster risk reduction & preparedness	Early warning systems, cross-border humanitarian coordination	Uneven local capacity and training coverage

Synergies and Gaps in Policy and Practice

The linkage between BIMP-EAGA Vision 2025 goals and food security outcomes demonstrates clear synergies. Regional integration facilitates technology transfer, knowledge sharing, and investment inflows that can strengthen all four dimensions of food security. However, significant gaps persist, particularly in harmonizing regulatory frameworks, integrating climate adaptation into trade policies, and ensuring inclusive participation of marginalized communities.

Implications for Sub regional Cooperation

Achieving food security in Mindanao within the framework of BIMP-EAGA Vision 2025 requires a dual strategy such as scaling up successful adaptation measures and addressing structural barriers to cooperation. This entails deepening policy alignment between BIMP-EAGA members on climate adaptation and food system resilience, investing in climate-smart infrastructure and technology and enhancing capacity-building programs for local governments, cooperatives, and community-based organizations.

CONCLUSION

This study demonstrates that the implementation of BIMP-EAGA Vision 2025 in Mindanao has contributed to measurable progress in selected aspects of food security, particularly in enhancing agricultural trade, promoting climate-smart agriculture, and fostering regional cooperation. However, these benefits are unevenly distributed due to persistent challenges in infrastructure, policy coordination, and resource mobilization. The four dimensions of food security availability, accessibility, utilization, and stability show mixed outcomes, with stability being the most vulnerable to climate variability. Climate adaptation pathways introduced under the BIMP-EAGA framework have proven effective where local governance, institutional support, and farmer engagement are strong, but adoption remains inconsistent across the region. Moving forward, aligning national and local development plans with BIMP-EAGA's regional priorities, harmonizing cross-border regulations, and integrating climate adaptation directly into agricultural strategies will be critical to sustaining and scaling these gains. Strengthening partnerships between governments, local communities, and the private sector can unlock greater potential for resilient, inclusive, and sustainable food systems in Mindanao and across the BIMP-EAGA sub region.

From the conclusion, several policy recommendations can be identified, including:

1. Integrate BIMP-EAGA Vision 2025 with National and Local Development Plans, ensure that Mindanao's agricultural and food security strategies explicitly reference and align with BIMP-EAGA's regional priorities to maximize cross-border synergies and funding opportunities.
2. Harmonize Cross-Border Agricultural Regulations**,** develop common standards for agricultural products, sanitary and phytosanitary measures, and trade documentation among BIMP-EAGA member economies to reduce transaction costs and facilitate smoother trade flows.
3. Scale Up Climate-Smart Agriculture (CSA) Practices, promote the widespread adoption of CSA technologies such as drought-resistant crop varieties, integrated pest management, and efficient irrigation systems through capacity building, incentives, and targeted investments.
4. Enhance Infrastructure for Agricultural Resilience, invest in cold storage facilities, farm-to-market roads, and digital supply chain platforms to reduce post-harvest losses and strengthen the stability of food supply across seasons and climate shocks.
5. Strengthen Multi-Stakeholder Collaboration, foster partnerships between local governments, private investors, farmer cooperatives, and research institutions to co-develop innovation hubs and joint ventures in agro-processing and value-added products.
6. Integrate Climate Adaptation into Food Security Policy**,** embed climate risk assessments into agricultural planning, ensuring that adaptation measures such as mangrove rehabilitation, flood control infrastructure, and sustainable fisheries—are implemented as part of long-term food security strategies.
7. Establish a BIMP-EAGA Food Security Monitoring Mechanism, create a regional database and early warning system to monitor crop yields, fishery stocks, climate impacts, and market prices, enabling timely interventions during food crises.

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