

Resistance to capitalist-oriented agrarian development: A case study of the “Matigsalug” in Mindanao, Philippines

Angelo Lenard E. Yu^{1,2,*}, Crisanto H. Ecaldre^{2,3,4}, Nikodemus Niko^{5,6}, and Nineo Mandanuay⁷

¹Language and Literature Department, University of Southeastern Philippines, Obrero, Davao City

²PhD in Indigenous Studies Student, University of the Philippines Baguio, Gov. Pack Road, Baguio City

³College of Computing, Arts and Sciences, Western Philippines University, Puerto Princesa City, Palawan

⁴Social Science Research and Development Center, Western Philippines University, Puerto Princesa City, Palawan

⁵Social and Political Science Department, Maritim Raja Ali Haji University in Tanjungpinang, Indonesia

⁶Post-Doctoral Fellow at the Department of Sociology and Anthropology, Faculty of Political Science, Chulalongkorn University, Thailand

⁷Member, “Matigsalug” Indigenous Cultural Community (ICC), Sinuda Kitaotao, Bukidnon, Central Mindanao

*Corresponding author: angelolenard.yu@usep.edu.ph

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ABSTRACT

For generations, “Matigsalug” traditional farming has been the foundation of sustainable development in their ancestral domain, sustaining livelihoods, preserving cultural traditions, and nurturing ecological wisdom in their farmlands. This study examines “Matigsalug” resistance to capitalist-oriented agrarian development, as evidenced by the proliferation of the Green Revolution in their farmlands. This qualitative study adopted a case study design combined with Indigenous methodologies, drawing on practices such as storytelling, visiting, and sharing circles to foreground participants’ self-determination, autonomy, and identity throughout the research process. The theoretical framework of Green Marxism was also used to critically analyze the voices, choices, and agency of the “Matigsalug” in their quest for indigeneity in their farmlands. The critical perspectives on “Matigsalug” farmland are as follows: (1) capitalist disempowerment of traditional farmers; (2) dependence on Westernized forms of development through the Green Revolution; (3) displacement due to unsustainable modern farming; (4) resistance to capitalist-oriented agricultural practices; (5) resistance through regenerative agriculture; and (6) resistance through the rejection of the Green Revolution. This study contributes to an understanding of the provenance of the “Matigsalug” ontology, epistemology, and axiology, enabling a deeper evaluation of reciprocity and relationality with the land. The indigenous worldview of the “Matigsalug” also conveys the cultural and emotional significance of their interactions with the environment, through which they develop meaning and identity. The study sheds light on the complex interplay among negotiated ecological spaces, traditional narratives, memories, and values associated with their farmland, offering valuable critical insights into their relationship with the land.

Keywords: Green Marxism, indigeneity, self-determination, traditional ecological knowledge

INTRODUCTION

“Matigsalug” is one of the distinct Indigenous Cultural Communities/Indigenous Peoples (ICCs/IPs) of Mindanao, Philippines, whose members resist capitalist-oriented development in their ancestral lands. Timms (2017) argued that the Green Revolution, an agrarian-capitalist program, was introduced to local communities and has continued to burden indigenous farmers in different countries around the world. The Green Revolution encourages the use of chemical pesticides, fertilizers, and irrigation (Pfeiffer 2006). However, it has more detrimental ecological effects than traditional farming practices, which relate to what Karl Marx characterized as a permanent metabolic rift between nature and humans (Campbell 2009). Furthermore, Shiva (1993) contended that the Green Revolution prohibited IPs from using their traditional methods of land cultivation and farming in their ancestral domains. Gascon (2011) discussed how the “Matigsalug”, who live on the island of Mindanao, Philippines, strongly resist agricultural development initiatives because they prefer to live close to their customary habitat and practice traditional farming methods. They have moved to areas within their ancestral domain, concentrating on their most common economic activity, rural agriculture, while avoiding encroachment on the lands of other IPs. Although many capitalist-oriented agrarian development initiatives have been introduced to them, they remain united in their efforts to preserve their traditional farming methods. Thus, capitalists exert power to dominate the political economy, truth, and knowledge by compelling IPs to adopt modern farming techniques (Burchell et al. 1991). Hence, the communal experiences of the “Matigsalug”, including disempowerment due to capitalism, dependency on Western forms of development, displacement due to unsustainable modern farming practices, resistance through regenerative agriculture, and resistance through the rejection of the Green Revolution, contribute to a decolonizing perspective on the Philippine traditional agriculture system and modern capitalism.

The “Matigsalug”, who live on the island of Mindanao, Philippines, have an ancestral domain near the Salug River and originated in the mountain regions of Arakan-Cotabato, Bukidnon, and Davao. Originally, “Matigsalug” did not use inorganic insecticides and pesticides in farming (Macusi et al. 2023). The “Matigsalug” are comfortable with embracing their concept of development, utilizing a Traditional Ecological Knowledge (TEK) system to sustain their farmlands by employing the “slash-and-burn” technique (Celeste et al. 2020). The ancestral beliefs of the “Matigsalug” are passed down from generation to generation; they guide the community in treating all living creatures with kindness to win the favor of “Manama” (the Creator), whom they believe provides their traditional knowledge and superstitious beliefs. In “Matigsalug” culture, women are expected to perform all domestic and agricultural work, including planting, weeding, plant maintenance, and harvesting. In

contrast, men are expected to hunt and clear the land for planting (Castro 2012). For them, it is necessary to perform the "Panubadtubad" ritual, particularly when engaging in agricultural work. This ritual is conducted at a "Tambara" (altar) or a site of offering, before hunting, fishing, or planting. The offerings, such as tobacco, money, poultry, betel nuts, cooked or raw rice, and wishes for health, wealth, and a successful catch, are all presented to the "Diwata" (deity). In "Panubadtubad," sacrifices are made to the deities as part of a customary ritual to secure favors from the "Diwata" (Gascon 2011).

Furthermore, heritage rice is increasingly popular nowadays, and its varieties are well-known within the growing organic farmer community (Rambukwella and Priyankara 2016). In this regard, "Matigsalug" women farmers produce various varieties of heritage rice to ensure food security during periods of drought or heavy rainfall in their community. Accompanied by "Matigsalug" rituals, they cultivate heritage rice, which does not require irrigation. Therefore, agricultural adaptation is critical, and governments worldwide are exploring ways to utilize indigenous knowledge and customs to supplement scientific understanding and help feed people (Roht-Arriaza 1996). According to Agbas (2024), the "Matigsalug" heritage rice-keeping tradition is a survival practice, as evidenced by its transmission from mother to daughter across generations. Maintaining a secure supply of seeds through their indigenous seed-banking tradition allows them to continue planting food crops regardless of the weather conditions. The seeds are dried separately and stored in a wicker basket by the elders in a carefully selected tree house. The storage location must be free of pests and rodents, not prone to landslides and floods, and is situated away from other trees. If dried correctly, the seeds can survive for up to three years. In response to drastic weather changes, extended droughts, and flooding, the "Matigsalug" adjust by ensuring that the seeds are safe and secure for the following planting season. The "Matigsalug" are typically responsible for tilling the land. The cultivars do not wash away with the topsoil after heavy rains, even when heritage rice is planted on a mountain slope.

Internationally, the Green Revolution was the first attempt by countries worldwide to introduce commercial agriculture to the tropics. Since technology is a byproduct of the capitalist economic system, it is inconsistent with the TEK system of IPs. Furthermore, capitalist competition dictates how hard capitalists must work to reach broader markets while minimizing expenditures. The new method requires extensive applications of inorganic fertilizers, which can severely eutrophy lakes, streams, and rivers. Runoff from these applications further accelerates the process of protein degradation (Cleaver 1972). In Indonesia, various integrated pest management frameworks have been introduced to counter the methods of the Green Revolution. These frameworks encourage natural biological, physical, and chemical pest controls, such as weather modification,

habitat modification, and the use of natural enemies, as alternatives to synthetic pesticides (Welker 2012). Small farmers are increasingly left behind and further marginalized due to their limited capacity to adopt the recommended technological packages, which often require substantial financial capital, access to credit, and integration into formal agricultural markets (Swastika et al. 2025). The emphasis on high-yield varieties, synthetic inputs, and mechanized practices tends to privilege larger and better-resourced producers, while smallholders face structural constraints that prevent them from fully implementing these technologies. As a result, technological standardization under the Green Revolution not only deepens socioeconomic inequalities in rural areas but also reinforces dependency and vulnerability among small farmers who are excluded from the promised productivity gains (Hansen 1972; Liu and Yamauchi 2014; Zulfa et al. 2025; Swastika et al. 2024). The IPs in the Philippines and Malaysia share similar arguments regarding their sense of place, natural environment, indigeneity, and self-determination. These concerns have formed key platforms through which IPs have sought to protect their farmland and traditional livelihood sources from globalized, modernized agro-industrial farming methods. On several occasions, local protest campaigns have successfully connected with national and international activist networks to oppose the growth of agricultural plantation production inspired by the Green Revolution (Barney 2004). In Thailand, traditional farmers have protected Thai rice from genetic deterioration and from the potential for technology-driven breeders to develop new rice varieties through modern breeding methods. They remain steadfast in their efforts to maintain direct access to and promote the cultivation of traditional rice varieties (Jao Dor, Ma Nam Pua, Fha Kong Noi, Nang Kao, and Kii Tom Kao) in their farmlands (Na 2015).

The Sustainable Development Goals (SDGs) of the United Nations (UN), particularly SDG 2 “Zero Hunger,” which aims to end starvation, achieve food security, improve nutrition, and promote sustainable agriculture, as well as SDG 15 “Life on Land,” which addresses the protection, restoration, and sustainable use of terrestrial ecosystems, the sustainable management of forests, the fight against desertification, the reversal of land degradation, and the halting of biodiversity loss, can be achieved when world organizations collaborate with IPs to co-create, co-work, and co-produce agricultural systems and practices. The IPs across the globe, through their Indigenous Knowledge Systems and Practices (IKSP), play a vital role in advancing a deeper understanding of sustainability as they navigate the passage of time. Therefore, the sustainable farming methods of IPs in different corners of the world, such as the “Matigsalug” in Mindanao, Philippines, shed light on the reflexivity, reciprocity, and relationality of human beings with the ecological value of land, water, and forests amid the threat of capitalism (Agbas 2024).

This study elucidates the lived experiences and resistance of “Matigsalug” to capitalist-oriented agrarian development in their ancestral lands in Mindanao, Philippines. It aims to facilitate the preservation, sustenance, and development of the traditional farming belief systems that the “Matigsalug” have practiced since time immemorial. As the “Matigsalug” assert their voice, choice, and agency against the capitalist-driven form of development represented by the Green Revolution, this study also draws on the concepts of Green Marxism to reflect the daily lives of the “Matigsalug”, especially the farmers who have long been discriminated against, marginalized, and oppressed by capitalists. Moreover, this study serves as an eye-opener for the Filipino nation and beyond, helping people better understand the lifeways of the “Matigsalug” on the island of Mindanao, Philippines, as they face the risk of losing their farming tradition due to colonialism, modernization, and globalization.

METHODS

Research Design

This qualitative paper used an intrinsic case study design and an indigenous research methodology as its research design. As described by Creswell and Poth (2018), an intrinsic case study maintains the analytical techniques of a case study while focusing on a specific case within a specific group, and aims to gain an in-depth understanding of a unique phenomenon. The study also utilized focus group discussions (FGDs) and key informant interviews (KIIs) through indigenous methodologies, including storytelling and sharing circles, to ensure that the voices, choices, and agency of the “Matigsalug” came first in their pursuit of relational, reciprocal and reflexive narrative-conversations. As argued by Rodriguez-Tatel (2020), an indigenous research methodology is a systematic and rigorous process that not only documents existing IKSP but, above all, facilitates and assists IPs in their quest for self-determination, autonomy, and identity within a global context. The primary goal was not to essentialize, extract and intrude on the indigenous worldview but to ensure its meaningful preservation, sustainability, and development within the onto-epistemological perspectives of the “Matigsalug”. Furthermore, indigenous research methodologies value communal relationships and recognize that the relationality among the cosmos, animals, nature, and land produces knowledge systems. Hence, the “Matigsalug” maintain relational accountability for these deep connections with the environment, which lend validity and reliability to communal norms, as they are the recipients of the conversations within their society (Rodriguez-Tatel 2020).

Research Participants

In indigenous approaches, participants' storytelling is regarded as a fundamental method of transmitting information from generation to generation and was highly valued in traditional ways of knowing (Chan 2021). Conversely, sharing circles are founded on various principles and seek to guide learning through conversation. Participants express their heart, mind, body, and spirit and grant permission to report the different discourses that transpire during the study (Nabigon et al. 1999). Castellano (2008) argued that, in indigenous methodology, the participants are seen as co-learners, co-creators, and co-producers of knowledge rather than merely as subjects or objects of a study. As a result, the researchers' positionality focused on keen observation and empathetic listening to the "Matigsalug" participants living in southern and central Mindanao, Philippines, as they practiced traditional agriculture to address problems affecting their farmlands.

Sources of Data

To initiate the research, free, prior, and informed consent was obtained from the National Commission on Indigenous Peoples (NCIP). The researchers spent four weeks, from 31-11 July 2025, gathering data through KIIs and FGDs with the "Matigsalug" IPs, including a Datu (DU1), an Elder (ER1), a Balyan or Shaman (BN1), a Bae or Princess (BE1), and two Bagani or Warriors (BI1 and BI2). The first and last letters of each title, together with a number, were used as participant codes in the Results and Discussion section. Ten "Matigsalug" farmer-participants were willing to be interviewed about their lived experiences within their ancestral domain; however, the researchers selected six of them based on age, gender, social status, and traditional knowledge of the land.

Research Process

The "Matigsalug" led the interviews throughout the research process. Representatives from several government agencies had spoken with them about the condition of their farmland. The "Matigsalug" discussed the necessary ceremonies to be performed before the fieldwork. During the preparatory activity, the participants signed a memorandum of understanding. During the fieldwork, the "Matigsalug" collected, recorded, translated, interpreted, and evaluated the data provided by the key informants. During the storytelling sessions and sharing circles, the research proponents listened attentively to participants selected by the "Matigsalug" elders, guided by the principle of reflexivity. The research proponents fully accepted that if a participant was unwilling to respond or continue the conversation, the decision would be treated with utmost respect. Recording equipment, such as cameras and voice recorders, was used with the permission of the "Matigsalug" key informants. Regardless of the study's outcomes, its objectives were required to remain aligned with the self-determination, autonomy, and indigeneity of the "Matigsalug", as well as the restoration of their traditional farmland practices.

Data Analysis

This paper also utilized thematic analysis, in which themes were developed through familiarization with the data, generation of preliminary codes, identification, evaluation, definition, and labeling of themes, and preparation of the report (Braun and Clarke 2006). Thematic analysis offered a structured framework while remaining flexible in analyzing qualitative data to generate meaningful insights from the participants. During the familiarization stage, the researchers acquired in-depth knowledge of the data, followed by systematic coding in the second stage. The recurring patterns were critically analyzed during the review process to identify their distinctiveness. Furthermore, themes were developed based on the convergence and precision of the data provided. The final stage involved reporting the themes that presented compelling discourses. The concepts of reflexivity and inclusivity played vital roles in ensuring the transparent treatment of the gathered data (Ahmed et al. 2025). According to Bauyot et al. (2024), thematic analysis is a method that analyzes qualitative data, such as transcripts of KII and FGD responses. The data were first reviewed for familiarization and then coded through compilation and reduction; subsequently, the codes were clustered to find emergent patterns. Furthermore, Tudy et al. (2025) elaborated that thematic discussion requires proper source coding to ensure the truthfulness and legitimacy of the data used in interpreting the results. Hence, thematic analysis was applied to categorize the different experiences of “Matigsalug” in relation to capitalist-oriented development.

Ethical Considerations

The three principles of ethical research standards were applied in this study. Respect for individuals was the first principle, which was crucial because the researchers entered a community with unique cultural practices that most of its members wished to keep private. Another ethical consideration was recognizing key informants, which acknowledges tribal leaders who hold positions of authority in their culture (Bogdan and Belken 2016). The researchers were required to treat the research participants fairly, as they were ethically and legally protected under the second criterion, beneficence. This principle required the researchers to exhibit appropriate behavior in the presence of research participants because the indigenous lifestyle differs from modern lifestyles. The researchers were entrusted with the responsibility of working with the participants while showing full respect for and responsibility toward their praiseworthy traditional norms. As Yu and De Catalina (2024) stated, researchers must inform participants that the study aims to assist the community in its quest for self-determination. The researchers sought their full participation and sought to ensure a beneficial study outcome by emphasizing these benefits to them. Daly and Rosenfeld (2003) explained that researchers should maximize potential benefits and minimize potential harms; this viewpoint applies beneficence as an ethical principle to manage respondents' comfort and discomfort levels. Agaton (2022) asserted that the researcher must ensure that the study's

implementation will not harm the participants' culture. Consequently, it was necessary to give the research participants the utmost respect they deserved. This entailed seeking approval from the NCIP, elders, the Datu, the Balyan, the Bagani, and other trustworthy individuals who could attest that no cultural or ethical limitations would be violated throughout the research process. Hence, only participants who provided their full consent were included in this study (Crisol and Oledan 2022). Justice was the final ethical principle observed in conducting the study; this principle allowed the researchers some flexibility in weighing the advantages and disadvantages of the research. Therefore, the researchers had a responsibility to assure the participants that the study's findings would benefit the community.

RESULTS

Capitalistic Disempowerment of Traditional Farmers

This occurs when indigenous traditional farmers lose their autonomy over their farmlands due to disempowering capitalist ideological structures that promote unsustainable market systems and commercial production for the purpose of commodification. This results in a power imbalance between farmers and capitalists, characterized by inflated costs, predetermined contracts, and higher prices for farm products. These structures undermine the value of IPs' agricultural practices in favor of modernized agronomy, affecting their agency in preserving cultural heritage, self-determination, and their relationship with the land. In an interview, the first "Matigsalug" participant highlighted:

"Dengan, meupiya pad ka eg-apil te kinaraan ne pegpamula su duen pad egkahaani ta, piru kuntee, te iyam e ne agrikultura, ka intiru ne kalibutan neiyam e degma. Naliseran key e ka egtangke te keepusan su warad egkakuwa ney minsan nekey." (Translated: According to DU1, "Before, it was better to engage in traditional farming because we could still make a profit. However, today, with modern agriculture, everything in this world has changed. We have difficulty coping, and in the end, we gain nothing.")

This account illustrates that farming has become so difficult because modern agricultural systems require greater amounts of fertilizers, microloans, and transportation. Under these circumstances, farmers have insufficient control over the forces of capitalism, and the burden of having no alternatives is particularly evident, as the "Matigsalug" succumb to disempowerment due to the disproportionate effects of the capitalist system.

Dependence to Westernized Form of Development through Green Revolution

Reliance on Western development, particularly through the adoption of the Green Revolution, has provided advanced farming models; however, it has altered the more sustainable traditional farming practices of

IPs, which uphold their relationship with the land and forests. Dependence on agronomic chemicals, modern machinery, and associated commercial systems has alienated IPs from traditional farming methods. Hence, continued dependence on modern farming systems and practices puts them at a disadvantage, leading to inefficiencies in indigenous farming practices and cultural system. In an interview, the second “Matigsalug” participant revealed:

“Ka kanami ne me prduktu te agrikulutura me binggala, kasile, sahing, wey lusiya. Ka me talagpamula te “Matigsalug” migpamelegye degma te kalabasi, pitsay, sitaw wey sehutung. Ka langun ne me gulayen egkaluhey te tatelu ne bulan te kene pad ka timpu te peggaani, angin e te pitsay ne egkaluhey re te hep-at wey lalima ne aldew, wey te sitaw ne egkaluhey re te daruwa ne bulan. Sengekankuwa, eglised key te pegpanelepi; ke ware selepi ney kene key degma egpakapamula te gulayen. Tenged te pegka-awe te kinaraan ne pegpamula ne dakel amana ka bulig. Kame gulayan kuntée egsalig e te palambeg; duen de egkahaani ney ke egpakabeli key te palambeg ne imbelegye te me nigusyanti.” (Translated: According to ER1, “Our agricultural products are mostly cassava, sweet potatoes, and bananas. Also, “Matigsalug” farmers sell squash, pechay, beans, and eggplants. Almost all vegetables will take three months before the harvest season, except pechay, which will take forty-five days, and beans, which will take two months. Often, we have difficulty with finances; if we don't have money, we cannot produce vegetables. Traditional farming used to be a great help. Today, however, vegetable production here depends on inorganic fertilizers. We can harvest something only if we can afford to buy these fertilizers from the capitalists.”)

This account indicates that farmers had moved away from their traditional farming methods and had become dependent on fertilizers. As they became reliant on this capitalist trap, the use of these chemicals became increasingly difficult to sustain due to their high financial costs. Moreover, the “Matigsalug” have demonstrated that their indigenous farming system is a sustainable method of land cultivation. This system has contributed to agricultural and economic benefits because the farmers care for the environment through their TEK.

Displacement due to Unsustainable Modern Farming

Traditional indigenous farmers abandon or lose access to their land due to unsustainable agriculture driven by modern farming systems and practices, which require high production levels, extensive commercialization, and extensive environmental resource extraction. From a modern agricultural perspective, farming practices can have many negative effects on indigenous farmlands, such as soil depletion, water scarcity,

ecological imbalance, and agricultural stagnation, making the land difficult to sustain. These conditions compel indigenous farmers to leave their ancestral lands and move to the lowlands, where they may become wage laborers through urban migration, thereby weakening the traditional practices of IPs. In an interview, the third “Matigsalug” participant explained:

“Kuntee, kene key e egpakapamula tenged te malayat ne prisyu te palambeg, ka pinakasubla sikas eg-utang key eyew due pang kapital. Miggimu key naande te duma ne paahi gamit ka katuenan eyew due igpakabelegye ney te me mahaliyug.” (Translated: According to BN1, “Today, we are not farming because of the high cost of fertilizer, and the worst is that you will be indebted to a capitalist. Today, we are just doing some arts and crafts and selling them to tourists.”)

These accounts indicate that “Matigsalug” farmers no longer cultivate their lands due to the high cost of fertilizers. They have shifted to selling handicrafts to tourists as a means of survival. Because they have had to abandon traditional farming due to the social effects of the Green Revolution, they face pressure to leave their lands to sustain their livelihoods. Thus, this situation reflects a capitalist transformation in which “Matigsalug” farmers have increasingly become subject to modern capitalist agricultural practices, even when this shift is not entirely intentional.

Resistance to Capitalist-Oriented Agricultural Practices

Traditional indigenous farmers often challenge capitalist development initiatives because of their profit-driven commercialization, which generates extensive market demand and privatization that conflict with their emphasis on land autonomy and cultural identity. Their refusal to adopt these practices limits the excessive treatment of their lands associated with inorganic farming systems developed during the Green Revolution. Such resistance constitutes a counter-hegemonic act, as it reduces farmers' power struggles over the labor force, land cultivation, and natural resources, enabling indigenous agricultural agency among IPs. In an interview, the fourth “Matigsalug” participant stated:

“Neyimu key ne ribildi tenged su ka tane ne ingggat te kabuybuyahan ney inggimu e ne ransuhan. Ka nalein-lein ne in-ugpaan te “Matigsalug” inggimu e ne pinamulaan te paley para te lungsud, wey kame kakayuwan diye te me bubungan, impanempug te iligal ne paahi te me kapitalista. Indereetan dan ka me kabubunganan ney, sikannaa na ka migribildi key eyee due laheng te peg pakig-ehet: “Napu te pegdumut wey panimales, ka pakig-ehet para te tane wey te me etew.”

(Translated: According to BE1, “We became rebels because our ancestral land was transformed

into ranches. Different “Matigsalug” communities were converted into rice fields for the towns, and the mountains were subjected to illegal logging by capitalist companies. Our mountains were destroyed, so we rebelled with the following battle cry: “Mountain of hatred and revenge: the struggle for the people's land.”)

These accounts highlight the resistance and revolution in which the “Matigsalug” have engaged in the past. These experiences have become a means for the community to remember the value of forests, land, and water in sustaining their farmlands. In their worldview, their lives are closely connected to their farmland because it is an essential source of food for survival. They also respect their forests and farmlands as the enduring heritage of their ancestors.

Resistance through Regenerative Agriculture

The response of traditional indigenous farmers to extractive, intrusive, and capitalist-oriented farming methods has given rise to regenerative agriculture, which is more effective and grounded in cultural preservation, development, and sustainability. By adopting more natural farming practices, such as using heirloom seeds, agroecological diversification, and unconventional composting, farmers draw on traditional ecological knowledge to reduce their reliance on inorganic chemicals that harm indigenous farmlands. Hence, this act of resistance is a clear assertion of indigenous knowledge, environmental stewardship, and agricultural indigeneity. In an interview, the fifth “Matigsalug” participant shared:

“Impaay-ay-ayaran ney ka tane wey weyig ney su amanan mahinungdanen para te peg-uugpe ney. Inggimu ney ne palingki kame beuhan. Ka egkakeen ne ingkeen ney puun te maluag ne kapuwalasan. Egkuwa key te tambal ne nakapamula puun te puwalas ke due egderalu. Sikannaa, te pegkamet eglibed ki te mahinungdanen ne paahi wey insabeka ne lalimma ne kasangkapan puun te impamupu ne dewun te Madre de cacao, weyig te kakaw, suka, molasses, wey asin- eyew egpekeyimu ki te kinaraan wey organiko para te me uled-uled. Ka daruwa ne hun-a ne kasangkapan ne inggamit eyew te peggimatey te me hila munen wey me uled-uled iyan sika se suka wey Madre de cacao. Piru, inggamit ki re tire ke kene ki egpakabebeli te molasses. Egdeket kame uled-uled diye te dewun minsan eg-uran tenged su ka molasses wey ke tire iyan egweil isip pandeket. Inggimu key te pamaahi, intahu ney seini te tahanan wey inlebeng ney seini te 15 ne aldew wey ke daruwa ne simana. Ka naandan ne organiko ne panggimatey te uled-uled in-andam eyew eggamiten.” (Translated: According to B11, “We care for our land and water because they are essential to survival. We refer to the river as our marketplace. The food we consume comes

from the enormous forest. We acquire medicinal herbs from the forest if someone is sick. Therefore, we cannot survive if our land is taken away. In farming, we return to the importance of carrying for the environment and combine five ingredients—crushed Madre de cacao leaves, cacao water, vinegar, molasses, and salt—to create our traditional and organic pesticide. The two primary ingredients used to control weeds and pests are vinegar and Madre de cacao. However, we use sugarcane if we cannot afford to purchase molasses. The pesticides adhere to the foliage even when it rains because the molasses or sugarcane acts as a binding agent. We prepare the solution, put it in containers, and then bury the containers for 15 days to two weeks. The traditional organic pesticide is then ready for use.”)

These statements suggest that integrating environmental and traditional practices into their daily lives is one of the best ways to preserve the land. The farming culture and traditions of the “Matigsalug” indicate that the resources needed to address their agricultural problems are present in their environment. Hence, they express their indigeneity through the traditional ecological knowledge they have possessed since time immemorial, which gives them a strong sense of identity and self-determination.

Resistance by Rejecting the Green Revolution

Refusal to adopt modernized agricultural systems introduced by capitalists challenges the notion of development that conflicts with IKSP, which promotes a strong sense of reciprocity with the environment, cultural values, and customary practices. This refusal strengthens indigenous farmers’ agency over the farmland handed down from generation to generation by their ancestors, enabling them to exercise self-determination and empowerment within their ICCs. Hence, this counter-hegemonic resistance legitimizes their traditional knowledge and decision-making, thereby paving the way for agricultural sustainability. In an interview, the sixth “Matigsalug” participant stated:

“Kene ne meupiya ka me pinamula ney ke iyan ney eggamiten ka me komersya ne panggimatey te me uled-uled, sikannaa ka miglibed key te an-anayan wey miggimu key te organiko ne peggimatey te uled-uled. Nakita ney degma ne ka peggamit te kene ne organiko ne peggimatey te uled-uled migpabulus migdereet te pinamula ney. Sikannaa ka kene ne meupiya ka kame pinamula ney ke eggamit key te komersya ne pampalambeg wey peggimatey te uled-uled. Migpabulus ki te kanta ne peg-ayad-ayad te tane para te keupianan wey meupiya ne peggaani. Ka kustumbri te peg-ayad-ayad wey pegpatubung te tane ta migsugud pad te kanta ne me kabuybuyahan, ne migbehet te umul ran eyew egmeupiya ka emul te seup ne hinirasyon.”

(Translated: According to BI2, “Our crops were not healthy when we used commercial pesticides, so we returned to our roots and developed an organic pesticide. We also observed that using inorganic pesticides continued to damage our farms. Therefore, our crops did not grow as well when we used commercial fertilizers and pesticides. We continue our heritage of preserving the land for the benefit of healthier harvests. The custom of conserving and cultivating our land dates back to our great predecessors, who devoted their lives to improving the lives of future generations.”)

These statements indicate that the use of inorganic fertilizers and pesticides, which are commonly associated with the Green Revolution, can harm the “Matigsalug”’s farmland. They recognize that the value of their farming tradition takes precedence over that of modern practices. Hence, they need to preserve and draw on their traditional ways of knowing, as these are also considered valuable gifts from their ancestors.

DISCUSSION

Disempowerment of “Matigsalug” Traditional Farmers under Capitalist System

The lived experiences of the “Matigsalug” reveal their powerlessness as their land is increasingly subsumed by capitalism, even though traditional farming provides them with a sustainable way of life. The introduction of modern agriculture has created numerous problems, including the sale of large quantities of chemical fertilizers, micro-lending systems, hoarding, and transportation monopolies. Consequently, the current generation of “Matigsalug” farmers faces threats from modern farming trends associated with the Green Revolution. As a consequence of the colonized and globalized mindset of the government and capitalists, the “Matigsalug” are slowly moving away from traditional farming and becoming alienated from practicing it on their ancestral land due to purported goals of preservation, development, and sustainability promoted by Western imperialists to marginalize, discriminate against, and oppress IPs in the present generation. Armstrong et al. (2007) strongly contended that indigenous forestry knowledge systems have evolved over thousands of years of direct human interaction with the environment; these systems consist largely of local inventions, technologies, know-how, skills, customs, and beliefs that bring the community together to protect the forest's resources and cultural values. Thus, capitalism, through the Green Revolution in “Matigsalug” farmlands, leads to the total disempowerment of the community. Similarly, Chambers (1997) affirmed that people in the modern world often forget the local knowledge of IPs who are left behind because they are considered marginalized individuals with inferior ways of thinking.

The development brought about by the capitalist-oriented farming system posed a problem for “Matigsalug” farmers due to its high costs, prompting them to realize that reclaiming their traditional agricultural practices, which are connected to their land and environment, is necessary for sustainability. In this sense, Saito (2023) claimed that an apparent tension between Marxism and environmentalism may lead to disempowerment, as socialist politics emphasize technological development to provide more for everyone. In contrast, environmentalism highlights that there is too much consumption and overproduction; therefore, it emphasizes slowing down to protect nature. Thus, to protect both people’s lives and nature, it is necessary not to succumb to the grip of capitalism. When Karl Marx conceptualized abundance, he did not mean technological advancement but the convenience of life achieved by reducing the burden of primary commodities. For him, the foundation of ideal socialism was having equal abundance in society, but if capitalist greed prevails, it will lead to ecological catastrophe. The “Matigsalug” on the island of Mindanao, Philippines, have had experiences similar to those of the Aboriginal people of Canada. Mann (2000) attested that those who hold power perceive the role of capitalists as one of instigating massive control over the IPs, resulting in their disempowerment from one generation to the next. He further argued that the roots of disempowerment are historical and economic, as demonstrated by land settlers when they excavate the natural resources of an area.

The Green Revolution and the “Matigsalug” Dependence on Westernized Agricultural Development

When the “Matigsalug” were introduced to the Western agricultural system, including the Green Revolution, they suffered from its detrimental effects on their farmlands. Consequently, new technologies and knowledge in farming that were developed and shared with IPs became additional factors contributing to traditional farmers' opposition to the inadequacies of modern agricultural methods (Bebbington 1993). When capitalist society promotes chemical fertilizers as one of the means associated with the Green Revolution, it serves to establish capitalist control over the farming system and make IPs dependent on it. Hence, the goal of this capitalist-driven modern farming method was to create economic dependency and force the traditional farmers to adapt to the Western concept of development. Schiller (2019) elaborated that embracing scientific research on indigenous knowledge systems may help resolve dependency, which is counterproductive and unsustainable. The flow of information intended to bring about technological change in productive activities within the indigenous system itself was not publicly acknowledged, was sometimes actively discouraged, and was even outright prohibited. Indigenous solutions—that is, answers rooted in the indigenous knowledge system—to difficulties with agricultural production have, to date, been disregarded, even though they may be more appropriate for farmlands in most circumstances. Thus, capitalism is an oppressive power structure because it dictates practices

and marginalizes IPs, promoting capitalist approaches to the use of modern agricultural methods on their farmlands. Capitalists should have recognized that indigenous agricultural practices existed before enforcing modern farming methods. The case of the “Matigsalug” illustrates how they have faced cultural denudation as a result of capitalist interventions that changed their ways of knowing by introducing modern agricultural practices. Subsequently, the traditional farming practices of IPs have helped reduce agricultural problems related to land, labor, and money (Altieri and Funes-Monzote 2012).

The modern agricultural system made “Matigsalug” farmers dependent on capitalist methods to achieve high agricultural production; however, it also placed an equal burden on them, as they needed to purchase expensive chemicals to sustain the process. Marini (2022) expounded that there are interconnected dimensions of dependency: the subordination of oppressed, marginalized, and discriminated-against groups to dominant capitalists, such that the relations of production among subordinate groups serve to perpetuate their dependency on those at the top of the power structure. This dependency may result in the exploitation of workers such as farmers, laborers, and other minimum-wage earners, who rely on what the capitalists provide—often agricultural monocultures and raw commodities – which usually entail severe environmental degradation. Furthermore, the case of the “Matigsalug” on the island of Mindanao, Philippines, is not very different from that of Pakistan, as Pakistan provides a notable example of how the Green Revolution exacerbates unequal regional development. The new wheat varieties spread particularly well in West Pakistan, where almost all the fields were irrigated under regulated conditions. Eastern Pakistan, which relied on floodwaters for irrigation, experienced very little progress. As a result, the eastern region primarily depended on food imports from the western region, and its inhabitants experienced greater relative poverty than they had previously, while the western region became a region with abundant food (Cleaver 1972).

Modern Farming and the Displacement of “Matigsalug” Traditional Farmers

The “Matigsalug” also expressed concern about displacement, as evidenced by the unsustainability of the modern farming system. Over the years, the “Matigsalug” have found a haven in traditional farming because it is highly sustainable. However, when capitalists introduced modern farming, it caused problems for the “Matigsalug” people due to the high cost of fertilizers, micro-lending systems, inflation, and high transportation costs for their products. The “Matigsalug” community is indeed threatened by the infiltration of modern farming trends framed within the concept of the Green Revolution because these trends threaten their traditional farming practices. Hence, modernization often disregards the local knowledge of IPs who are left behind because Western imperialists consider them low-class individuals (Chambers 1997). With this modernized mindset, the

“Matigsalug” have been displaced from their ancestral land because of the unsustainable forms of development promoted by Western imperialism. The “Matigsalug” have resorted to other income-generating activities to sustain their livelihoods. Nussbaum (2011) argued that labor displacement is unproductive because it leads to poverty and dispossession, and when farming is scarce or costly, livelihoods are clearly threatened. Smith (2021) claimed that people, families, and organizations in disadvantaged ICCs struggle daily; resistance is a valuable and essential means of survival and, when conceptualized and mobilized, can become a potential transformational technique in their quest for self-determination and autonomy. Shiva (1993) asserted that when farming is scarce or costly, livelihoods may be destroyed, potentially leading to labor displacement, which is unproductive because it leads to poverty and dispossession.

The expensive agricultural chemicals introduced by capitalists to the “Matigsalug” farmers became a major cause of labor and land displacement. The high costs of inorganic fertilizers and pest control compounds forced farmers to take out loans, compelling them to seek another source of income for survival. Carte et al. (2019) stated that labor and land displacement are consequences of agricultural failure, leading to hunger and migration. Generally, any form of livelihood displacement results from uneven or false development promoted by Western imperialists. The Westernized concept of development has produced unfavorable social conditions that lead to dispossession and exclusion. Hence, the “Matigsalug” are often vulnerable to labor and land exploitation in their rural economy. Amirthalingam and Lakshmanb (2014) affirmed that, as in the Philippines, IPs who sustain their livelihoods through agriculture-based activities in Sri Lanka are disproportionately affected by displacement. Household incomes decline sharply due to the loss of their land and animals. After being displaced, IPs are unable to support themselves because they have lost access to their natural surroundings, their families have been dispersed, and their equipment has been destroyed.

“Matigsalug” Resistance to Capitalist Agriculture

The situation reached a point at which the “Matigsalug” resisted the capitalist agricultural system because it affected traditional practices in their ancestral land. Boxley (2022) explained that environmental injustices against IPs reveal flaws in capitalist operations because politically active and reinvigorated leaders of ethnic communities form movements and rebellions to win back their lands. Thus, Green Marxist scholars are sympathetic toward the struggles of IPs against the privations of capitalism in the context of power relations with nature and the labor force. In this case, the oppressed voices are recognized through their counter stories and testimonies of resistance. The concept of Green Marxism adopts a position aligned with the working class in the quest for hope amid the obstacles created by the capitalists. It seeks to identify and analyze forms of capitalists'

acts of injustice and inequality, mobilizing both affective and intellectual responses to promote revolutionary change.

Difficulties in achieving social justice in relation to land lead to resistance, as the “Matigsalug” challenge the malpractices they experience on the ancestral land, which has been handed down to them by their ancestors as heritage. Gomes (2004) argued that economic pressures, globalization, and modernization have an impact on IPs. The community serves as a microcosm in which modernity and economic growth coexist with more traditional ways of living. These communities likely face the difficulties and transformations brought about by capitalist influences, contemporary economic systems, and government development initiatives. According to Tuck and Yang (2021), the ties of IPs to the land reflect a deep ontological, cosmological, and epistemological bond with the natural world. Each member of an indigenous community has a responsibility to appreciate the land they possess, which is also the most precious and contentious resource. Ensuring that IPs have equal rights in a society that promotes economic growth on land taken from them is not enough. More must be done. The agency, sovereignty, and power of IPs over their ancestral domains are essential. This does not mean returning to “how things were in the past” or trying to change history. Like Indigenous Dayak communities in Indonesia, the “Matigsalug” employ shifting cultivation as a form of resistance against the occupation and expansion of oil palm plantations on their ancestral lands (Niko 2025). The integration of traditional agriculture by IPs in Indonesia and the Philippines is necessary to attain a sustainable farming system, ecological resilience, and customary heirlooms that reflect the relationality between human beings and the environment (Nagal 2025). The scholars argue that land cannot be divorced from its people. It mirrors the life and work of the community over time. Hence, the land belongs to its people; it is a powerful, indestructible domain that no one, not even the government, can destroy. Fenelon and Hall (2008) argued that IPs’ efforts to ensure their survival are inherently anti-systemic because they promote the legitimate right of groups of humans to organize and live their lives in ways other than those permitted or favored by neoliberal capitalism. Coburn (2015) explained that resistance includes indigenous survival in the face of centuries of genocidal policies and the ongoing dispossession and destruction of indigenous lands and waters. Resurgence is the reinvention of diverse indigenous ways of being, knowing, and doing in politics, economics, the arts, research, and all realms of life. “Matigsalug” resistance is similar to that of the IPs of Nigeria, whose farm settlement scheme is an example of capitalism alongside state-driven agricultural modernity. The IPs have not received state support despite their willingness to allow private participation on local terms. Through their traditional farming practices, the community has resisted this neoliberal agricultural ideology (Ogundiwin 2025).

“Matigsalug” Regenerative Agriculture as a Form of Resistance

The “Matigsalug” resistance has led to the regeneration of agricultural methods and a return to traditional farming practices that have been passed down from generation to generation since the farmers were young. Agricultural rituals are ingrained in their way of life, as they recognize the significance of cultivating their land. Prill-Brett (2015) argued that cross-cultural anthropological research shows that IPs have distinct social and cultural processes, rather than biological characteristics, that distinguish them. Cross-cultural data suggest that cultural diversity manifests as a sustainable development practice in relation to land.

The traditional methods used by “Matigsalug” farmers to produce organic pesticides play a vital role in agricultural sustainability and in resisting modern practices associated with the Green Revolution. As a community, the “Matigsalug” possess a resilient, regenerative agricultural practice that has withstood the test of time. According to Kumar and Choudhury (2024), IPs have made a significant contribution to traditional farming and soil reclamation methods by attempting to restore soil fertility and health while causing the least amount of disruption to adjacent ecosystems, thereby fostering environmental balance. IPs have used sustainable, traditional ecological knowledge for centuries to maintain their lands through traditional environmental management techniques. These practices highlight the importance of preserving and honoring long-standing customs to foster a harmonious and mutually beneficial relationship between people and the natural world. The use of traditional fertilizer by the “Matigsalug” is similar to that of IPs in Guatemala, where Patzún farmers traditionally mixed ashes, kitchen scraps, crop residues, weeds, leaf litter, and manure to produce compost (Morales et al. 2001). Hence, traditional agricultural practices, rooted in IKSP and developed over time by IPs, remain viable today. In fact, their potential as a source of sustainable food production during ecological crises is drawing attention from throughout the world (Hamadani et al. 2021).

Rejection of Green Revolution as “Matigsalug” Resistance

The “Matigsalug”’s rejection of the Green Revolution is a strong form of resistance against the destructive effects of modern agriculture. Folk (2024) elaborated that the emergence of the Green Revolution promotes a capitalist venture, with its main objective being to generate profit from commercial enterprises by portraying itself as an environmental advocate and promoting progressive and nature-affiliated market systems to attract consumers while subordinating Indigenous traditional ecological knowledge. Thus, the “Matigsalug”’s rejection of the Green Revolution is rooted in the goal of indigenizing nature for sustainability in modern times, which has translated into the inclusion of cultural practices in relation to regional economic growth. This rejection highlights the diversity and agency of IPs as decision-makers who maintain traditional farming systems.

The rejection of modern agricultural practices is a clear expression of resistance, as the “Matigsalug” engage in the relational and cultural preservation of their farming heritage by reflecting on the traditional practices associated with their land. As argued by Nelson and Ravinchandran (2019), the rejection of the Green Revolution amongst the IPs is due to its environmental and social effects, such as the loss of landraces in their ancestral domains, reduced production due to soil degradation, the disproportionate use of chemical pesticides that leave residues on food sold in markets and in ecosystems, the inability to bear increasing farming costs as a result of accumulated debts, which may lead to the sale of lands to wealthy businesspeople and settlers, and the inability to cope with rising food prices and financial difficulties, which may force indigenous farmers to stop farming practices to seek other sources of income. Thus, the “Matigsalug”’s experience with the Green Revolution is similar to that of communities in India and China, as they recognize the need to ground farming in the traditional knowledge of IPs for sustainability and development in modern times (Saha and Schmalzer 2016).

Therefore, the findings indicate that the “Matigsalug” are indeed resilient in maintaining their traditional practices on the farmland. Despite the modernity brought about by capitalist-oriented agricultural practices, they have resisted the Green Revolution and asserted their rights to their ancestral domains, which are used for traditional farming. The ancestors of the “Matigsalug” have taught the subsequent generations the value of relationality and reciprocity with the land, which they consider the essence of life and which reflects their culture, traditions, customs, and heritage. The capitalist methods of the Green Revolution are oppressive and discriminatory toward the agricultural practices of the “Matigsalug”. Hence, their response to this act of marginalization through indigenous resistance has given the community a sense of pride, honor, and dignity. Thus, the “Matigsalug” traditional farmers in southern and central Mindanao, Philippines, have employed efficient techniques that allow them to pursue farming methods rooted in their culture, which differ from the practices promoted by the Green Revolution. In modern times, capitalists have sought to prevent indigenous farmers from cultivating their land by introducing unsustainable agricultural practices that have adverse effects on the land and society. Thus, the “Matigsalug”’s revitalization of culture and tradition related to farming is a clear manifestation of resistance, as they have reclaimed their rights to their farmlands, self-determination, autonomy, and indigeneity. Hence, indigenous farmers play a vital role in shaping future generations, so they should not be subjected to misleading labels.

Moreover, the study of the lived experiences of the “Matigsalug” and their resistance to capitalist-oriented agricultural farming is significant to the community. Furthermore, the participants revealed the “Matigsalug” worldview, which centers on traditional farming methods as a sustainable, generational practice

within the group. The continuity of this traditional way of cultivating ancestral land provides reassurance that “Matigsalug” culture can be preserved, developed, and sustained amid the threat of farmland modernization through the Green Revolution. The participants' accounts are manifestations of an intention to resist capitalism and revitalize traditional farming practices. These accounts reveal “Matigsalug” communal relationality and ancestral land reciprocity, evident in the community's life and work.

The young generation of the “Matigsalug” needs references and review materials on traditional farming knowledge, as this research has validated their cultural heritage and helped them navigate the challenging future of their farmland. It provides them with opportunities to co-work, co-create, and co-produce agricultural knowledge systems through proper decision-making, without setting aside the importance of culture. Even amid the perilous effects of colonization, modernization, and globalization, this scholarly work offers the “Matigsalug” a stronger foundation for a better tomorrow by preserving their traditions.

The researchers have contributed to the revitalization and regeneration of traditional farming techniques among the “Matigsalug” by documenting them. Therefore, there is a strong likelihood that the traditional farming culture will continue to thrive in the years to come. This study has opened the doors for researchers, academics, and cultural workers to support future generations of the “Matigsalug”. Local government units (LGUs) and international and national organizations that advocate for the well-being of IPs will now have a stronger grasp of how to develop policies for the betterment of the community.

In general, the “Matigsalug” belief system is deeply embodied in their interactions with the ancestral land. Their resistance is a clear expression of their loyalty, respect, and honor for the ancestors who came before them. If the “Matigsalug” were to lose their ways of knowing (epistemology), being (ontology), valuing (axiology), doing (methodology), self-determination, and autonomy over their land due to capitalist control, it would be as if they were denied the opportunity to live a meaningful life that adheres to social justice.

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GENERATIVE AI STATEMENT

The researchers did not use AI tools to enhance or improve this study.

DECLARATION OF COMPETING INTEREST

The researchers declare that they have no competing interests involving any organizations or agencies.

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REFERENCES

- Agaton SI. 2022. The tuba culture in Leyte, Philippines. *Recoletos Multidisciplinary Research Journal*. 10(2):75-85. <https://doi.org/10.32871/rmrj2210.02.0>
- Agbas MGZ. 2024. “Matigsalug” of Marilog District, Davao City. In: Rayon LD, editor. *Indigenous knowledge systems and practices on disaster risk reduction and management of selected IP groups in the Davao Region*. Davao City (PH): University of Southeastern Philippines–Institute of Languages and Creative Arts. p. 84–93. <https://doi.org/10.53899/iksp.b2.008>
- Ahmed SK, Mohammed RA, Nashwan AJ, Ibrahim RH, Abdalla AQ, Ameen BMM, Khdir RM. 2025. Using thematic analysis in qualitative research. *Journal of Medicine, Surgery, and Public Health*. 6(5):100198. <https://doi.org/10.1016/j.glmedi.2025.1001982>
- Altieri MA, Funes-Monzote FR, Petersen P. 2012. Agroecologically efficient agricultural systems for smallholder farmers: contributions to food sovereignty. *Agronomy for Sustainable Development*. 32(1):1–13. <https://doi.org/10.1007/s13593-011-0065-6>
- Amirthalingam K, Lakshman RWD. 2014. Impact of internal displacement on agricultural livelihoods: evidence from Sampur, Sri Lanka. *Migration and Development*. 4(1):143–162. <https://doi.org/10.1080/21632324.2014.969480>
- Armstrong M, Kimmerer RW, Vergun J. 2007. Education and research opportunities for traditional ecological knowledge. *Frontiers in Ecology and the Environment*. 5(4):1-3. [https://doi.org/10.1890/1540-9295\(2007\)5\[w12:EAROFT\]2.0.CO;2](https://doi.org/10.1890/1540-9295(2007)5[w12:EAROFT]2.0.CO;2)
- Barney K. 2004. Re-encountering resistance: Plantation activism and smallholder production in Thailand and Sarawak, Malaysia. *Asia Pacific Viewpoint*. 45(3):325–339. <https://doi.org/10.1111/j.1467-8373.2004.t01-1-00244.x>
- Bauyot MFM, Villegas JP, Asaias VE. 2024. Gender roles of the Obu Manuvu women and leaders in the conservation of the Philippine Brown Deer *Rusa marianna* Desmarest, 1822. *The Palawan Scientist*. 16(2):47-56. <https://doi.org/10.69721/TPS.J.2024.16.2.05>
- Bebbington A. 1993. Modernization from below: An alternative Indigenous development? *Economic Geography*. 69(3):274–292. <https://doi.org/10.2307/143451>
- Bogdan R, Biklen SK. 2007. *Qualitative Research for Education: An Introduction to Theories and Methods*, Fifth Edition. Boston, Mass: Pearson.
- Boxley S. 2022. Green Marxism. In: *Encyclopaedia of Marxism and Education*. BRILL. https://doi.org/10.1163/9789004505612_019
- Braun V, Clarke V. 2006. Using thematic analysis in psychology. *Qualitative Research in Psychology*. 3(2):77-101. <https://doi.org/10.1191/1478088706qp063oa>
- Burchell G, Gordon C, Miller P. 1991. *The Foucault Effect: Studies in Governmentality*. University of Chicago Press. [accessed 2026 Sep 21]. <http://www.bibliovault.org/BV.landing.epl?ISBN=9780226080451>
- Campbell H. 2009. Breaking new ground in food regime theory: Corporate environmentalism, ecological feedbacks and the ‘food from somewhere’ regime? *Agriculture and Human Values*. 26:309–319. <https://doi.org/10.1007/s10460-009-9215-8>
- Carte L, Schmook B, Radel C, Johnson R. 2019. The slow displacement of smallholder farming families: Land, hunger, and labor migration in Nicaragua and Guatemala. *Land*. 8(6):89. <https://doi.org/10.3390/land8060089>
- Castellano MB. 2008. *Indigenous research*. In: Given LM, editor. *The SAGE encyclopedia of qualitative research methods*. Thousand Oaks (CA): SAGE Publications, Inc. p. 425–429. [accessed 2026 Sep 23]. <https://doi.org/10.4135/9781412963909.n211>
- Castro T. 2012. *Matigsalugs find link between farm technology, biodiversity, and survival*. [accessed 2025 Jul 02. <https://www.sunstar.com.ph/more-articles/finally-a-real-life-skill>
- Celeste BLD, Condino MP, Dadang RJ, Amoroso VB. 2020. Forest care, interconnectivity and maintenance of ecological resources among the Manobo-Matigsalug people of the Southern Philippines. *Environmental & Socio-economic Studies*. 8(3):21–33. <https://doi.org/10.2478/environ-2020-0015>
- Chan AS. 2021. Storytelling, Culture, and Indigenous Methodology. In: *Discourses, Dialogue and Diversity in Biographical Research*. Brill. p. 170–185. [accessed 2026 Sep 21]. <https://brill.com/display/book/9789004465916/BP000023.xml>
- Chambers R. 1997. *Whose reality counts? Putting the first last*. Intermediate Technology Publications, London.
- Cleaver HM. 1972. The contradictions of the Green Revolution. *American Economic Review*. 62(1/2):177–186. <https://www.jstor.org/stable/1821541>
- Creswell JW, Poth CN. 2018. *Qualitative inquiry and research design: Choosing among five approaches*. Fourth edition. Thousand Oaks (CA): SAGE Publications, Inc. [accessed 2026 Sep 21] <https://us.sagepub.com/en-us/nam/qualitative-inquiry-and-research-design/book246896>
- Crisol LG, Oledan EJ. 2022. The infusion of folk Catholicism to Tambal Binisaya as an indigenous healing system in Iligan City. *Recoletos Multidisciplinary Research Journal*. 10(1):101–114. <https://doi.org/10.32871/rmrj2210.01.07>
- Coburn E, editor. 2015. *More will sing their way to freedom: indigenous resistance and resurgence*. Halifax: Winnipeg: Fernwood Publishing.
- Daly BJ, Rosenfeld K. 2003. Maximizing benefits and minimizing risks in health services research near the end of life. *Journal of Pain and Symptom Management*. 25(4):S33–S42. [https://doi.org/10.1016/S0885-3924\(03\)00059-9](https://doi.org/10.1016/S0885-3924(03)00059-9)
- Fenelon JV, Hall TD. 2008. Revitalization and Indigenous resistance to globalization and neoliberalism. *American Behavioral Scientist*. 51(12):1867–1901. <https://doi.org/10.1177/0002764208318938>
- Folk M. 2024. Green capitalism won’t save Indigenous nations or Canadians. *USURJ: University of Saskatchewan Undergraduate Research Journal*. 9(1):1–11. <https://doi.org/10.32396/usurj.v9i1.691>
- Gascon MG. 2011. Traditional ecological knowledge system of the “Matigsalug” Tribe in mitigating the effects of dengue and malaria outbreak. *Asian Journal of Health*. 1(1):168–180. <https://doi.org/10.7828/ajoh.v1i1.161>
- Gomes AG. 2004. *Looking for money: capitalism and modernity in an Orang Asli village*. Melbourne, Vic: Trans Pacific Press.
- Hamadani H, Rashid SM, Parrah JD, Khan AA, Dar KA, Ganie AA, Gazal A, Dar RA, Ali A. 2021. Traditional Farming Practices and Its Consequences. In: Dar GH, Bhat RA, Mehmood MA, Hakeem KR, editors. *Microbiota and Biofertilizers*, Vol 2. Cham: Springer International Publishing. p. 119–128. [accessed 2026 Sep 21]. https://doi.org/10.1007/978-3-030-61010-4_6

- Hansen GE. 1972. Indonesia's Green Revolution: The abandonment of a non-market strategy toward change. *Asian Survey*. 12(11):932–946. <https://doi.org/10.2307/2643114>
- Kumar P, Choudhury D. 2024. Role of indigenous knowledge in agricultural soil reclamation without disturbing other ecosystems. In: *Bioremediation of Emerging Contaminants from Soils*. Elsevier. p. 465–488. [accessed 2026 Oct 19]. <https://doi.org/10.1016/B978-0-443-13993-2.00021-9>
- Liu Y, Yamauchi F. 2014. Population density, migration, and the returns to human capital and land: Insights from Indonesia. *Food Policy*. 48:182–193. <https://doi.org/10.1016/j.foodpol.2014.05.003>
- Macusi ES, Sales AC, Macusi ED, Bongas HP, Cayacay MA, Omandam JL, Schüller M, Vidal C. 2023. Indigenous knowledge systems and practices (IKSPs), livelihood resources and aspirations of the Matigsalog and Ata tribes. *Sustainability*. 15(14):11182. <https://doi.org/10.3390/su151411182>
- Mann M. 2000. Capitalism and the dis-empowerment of Canadian Aboriginal peoples. *Journal of Aboriginal Economic Development*. 1(2):46–54. <https://doi.org/10.29173/jaed109>
- Marini RM. 2022. *Dialectics of dependency*. New York (NY): Monthly Review Press.
- Morales H, Perfecto I, Ferguson B. 2001. Traditional fertilization and its effect on corn insect populations in the Guatemalan highlands. *Agriculture, Ecosystems and Environment*. 84(2):145–155. [https://doi.org/10.1016/S0167-8809\(00\)00200-0](https://doi.org/10.1016/S0167-8809(00)00200-0)
- Nabigon H, Hagey R, Webster S, MacKay R. 1999. The learning circle as a research method: The Trickster and Windigo in research. *Native Social Work Journal*. 2(1):113–137.
- Nagal CJC. 2025. Harvesting traditions: Exploring the indigenous agricultural knowledge systems in Java, Indonesia and Mindanao, Philippines. *Millennial Asia*. 09(2):72–87. <https://doi.org/10.1177/09763996251327672>
- Na NS. 2015. Inventing seeds beyond neoliberalism? Small-scale farmers in a nexus of socio-environmental movements in Nan province, Northern Thailand. *Thammasat Review*. 17(1):92–121.
- Nelson ARL, Ravichandran K, Antony U. 2019. The impact of the green revolution on indigenous crops of India. *Journal of Ethnic Foods*. 6:8. <https://doi.org/10.1186/s42779-019-0011-9>
- Niko N. 2025. Indigenous women in the food chain system: the marginalization and alienation of indigenous knowledge on environmental management. *Asian Politics & Policy*. 17(2):e70014. <https://doi.org/10.1111/aspp.70014>
- Nussbaum MC. 2011. *Creating capabilities: the human development approach*. Cambridge (MA): The Belknap Press of Harvard University Press. 256 p. <https://doi.org/10.4159/harvard.9780674061200>
- Ogundiwin BA. 2025. Community-owned farm settlement schemes: exploring an alternative agrarian spatial thought. *Journal of Land and Rural Studies*. 13(2):171–187. <https://doi.org/10.1177/23210249251328767>
- Pfeiffer DA. 2006. *Eating Fossil Fuels: Oil, Food, and the Coming Crisis in Agriculture*. Gabriola Island, BC: New Society Publishers.
- Prill-Brett J. 2015. *Tradition and Transformation: Studies on Cordillera Indigenous Culture*. Cordillera Studies Center, University of the Philippines Baguio.
- Rodriguez-Tatel MJ. 2020. Ang kapwa sa pakikipagkuwentuhan: danas at repleksiyon sa metodolohiya ng katutubong pananaliksik sa ilang piling komunidad ng mga katutubo sa Mindanao. *Talas: Interdisiplinaryong Journal sa Edukasyong Pangkultura*. 5:151–201.
- Rambukwella R, Priyankara EAC. 2016. *Production and marketing of traditional rice varieties in selected districts in Sri Lanka: present status and future prospects*. Colombo, Sri Lanka: Hector Kobbekaduwa Agrarian Research and Training Institute (Research report).
- Roht-Arriaza N. 1996. Of seeds and shamans: the appropriation of the scientific and technical knowledge of indigenous and local communities. *Michigan Journal of International Law*. 17(4):919–965.
- Saha M, Schmalzer S. 2016. Green-revolution epistemologies in China and India: technocracy and revolution in the production of scientific knowledge and peasant identity. *British Journal for the History of Science Themes*. 1:145–167. <https://doi.org/10.1017/bjt.2016.2>
- Saito K. 2023. *Marx in the Anthropocene: Towards the Idea of Degrowth Communism*. 1st ed. Cambridge University Press. [accessed 2026 Oct 19]. <https://doi.org/10.1017/9781108933544>
- Schiller HI. 2019. *Communication and Cultural Domination*. 1st ed. Routledge. [accessed 2026 Oct 19]. <https://doi.org/10.4324/9781315179162>
- Shiva V. 1993. *Monocultures of the Mind: Perspectives on Biodiversity and Biotechnology*. Palgrave Macmillan.
- Tuhiwai Smith L. 2021. *Decolonizing Methodologies: Research and Indigenous Peoples*. Zed Books. [accessed 2026 Oct 19]. <https://doi.org/10.5040/9781350225282>
- Swastika DKS, Priyanti A, Hasibuan AM, Sahara D, Arya NN, Malik A, Ilham N, Sayekti AL, Triastono J, Asnawi R, and others. 2024. Pursuing circular economics through the integrated crop-livestock systems: an integrative review on practices, strategies and challenges post Green Revolution in Indonesia. *Journal of Agriculture and Food Research*. 18:101269. <https://doi.org/10.1016/j.jafr.2024.101269>
- Timms BF. 2017. The Political Economy of the Other World: Seeking Sustainable Development. In: *The Other World*. 10th ed. Routledge. 33 p.
- Tuck E, Yang KW. 2021. Decolonization is not a metaphor. *Tabula Rasa*. 38:61–111. <https://doi.org/10.25058/20112742.n38.04>
- Tudy RA, Chin CK, Gabales, Jr. BG, Tudy IG. 2025. Welcoming or banning ChatGPT in higher education: Insights from Indonesia, Malaysia, and the Philippines. *The Palawan Scientist*. 17(2):13–22. <https://doi.org/10.69721/TPS.J.2025.17.2.02>
- Welker M. 2012. The Green Revolution's ghost: unruly subjects of participatory development in rural Indonesia. *American Ethnologist*. 39(2):389–406. <https://doi.org/10.1111/j.1548-1425.2012.01371.x>
- Yu ALE, De Catalina JZ. 2024. Manobo, Bagobo, and Mansaka indigenous cosmology: rediscovering culture through dramatist pentad structures of folk heroes. *Recoletos Multidisciplinary Research Journal*. 12(1):169–180. <https://doi.org/10.32871/rmrj2412.01.13>
- Zulfa S, Laili S, Sumaryani S, Saraswati GPD, Anjaniputra AG, Anam Z, Dawson V, Astuti R, Pangastuti Y. 2025. Locally grown seeds, natural fertilizer, and pranata mangsa: women farmers practicing sustainable agriculture while contesting the Green Revolution in Indonesia. *Asian Journal of Women's Studies*. 31(1):1–25. <https://doi.org/10.1080/12259276.2025.2465003>

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