

Type of the Paper: Article

# Older is not necessarily better: decolonizing Ifugao history through the archaeology of the Rice Terraces

Stephen B. Acabado <sup>1\*</sup> and Marlon M. Martin <sup>2</sup>

<sup>1</sup> Department of Anthropology, UCLA; [acabado@anthro.ucla.edu](mailto:acabado@anthro.ucla.edu)

<sup>2</sup> Save the Ifugao Terraces Movement; [emarlou.martin12@yahoo.com](mailto:emarlou.martin12@yahoo.com)

\* Correspondence: [acabado@anthro.ucla.edu](mailto:acabado@anthro.ucla.edu)

**Abstract:** This study examines the intersection of archaeological data and community narratives in interpreting the Ifugao Rice Terraces in the Philippines, a UNESCO World Heritage Site. Long regarded as 2,000-year-old symbols of an uncolonized cultural past, recent research challenges this view, suggesting a 16th-century origin coinciding with Spanish contact. This paradigm shift, supported by radiocarbon dating and ethnohistorical analysis, aligns more closely with local oral histories and portrays the Ifugao not as passive inheritors of tradition but as active participants in their history. This paper argues for the integration of scientific data with community stories, presenting a holistic understanding of the terraces as dynamic elements of Ifugao resilience and identity. The findings advocate a move away from romanticized historical interpretations toward a narrative that respects the complexity and adaptability of indigenous cultural landscapes.

**Keywords:** decolonizing archaeology; community engagement; Ifugao; Philippines; rice terraces

## 1. Introduction

The discipline of archaeology often finds itself at the crossroads of past and present, where the narratives of history meet the interpretations of the modern era. This intersection is fraught with challenges, particularly the tendency to romanticize the past, leading to a skewed understanding that often intertwines with national consciousness. Such romanticized views are not merely academic indulgences; they profoundly shape identities, policies, and perspectives of entire communities. A striking example of this phenomenon is the Ifugao Rice Terraces in the Philippines, a UNESCO World Heritage Site (Figure 1). These terraces are not just remarkable feats of agricultural engineering but also a palimpsest onto which various narratives of history, identity, and culture have been projected.

**Citation:** To be added by editorial staff during production.

Academic Editor: Firstname Last-name

Received: date

Revised: date

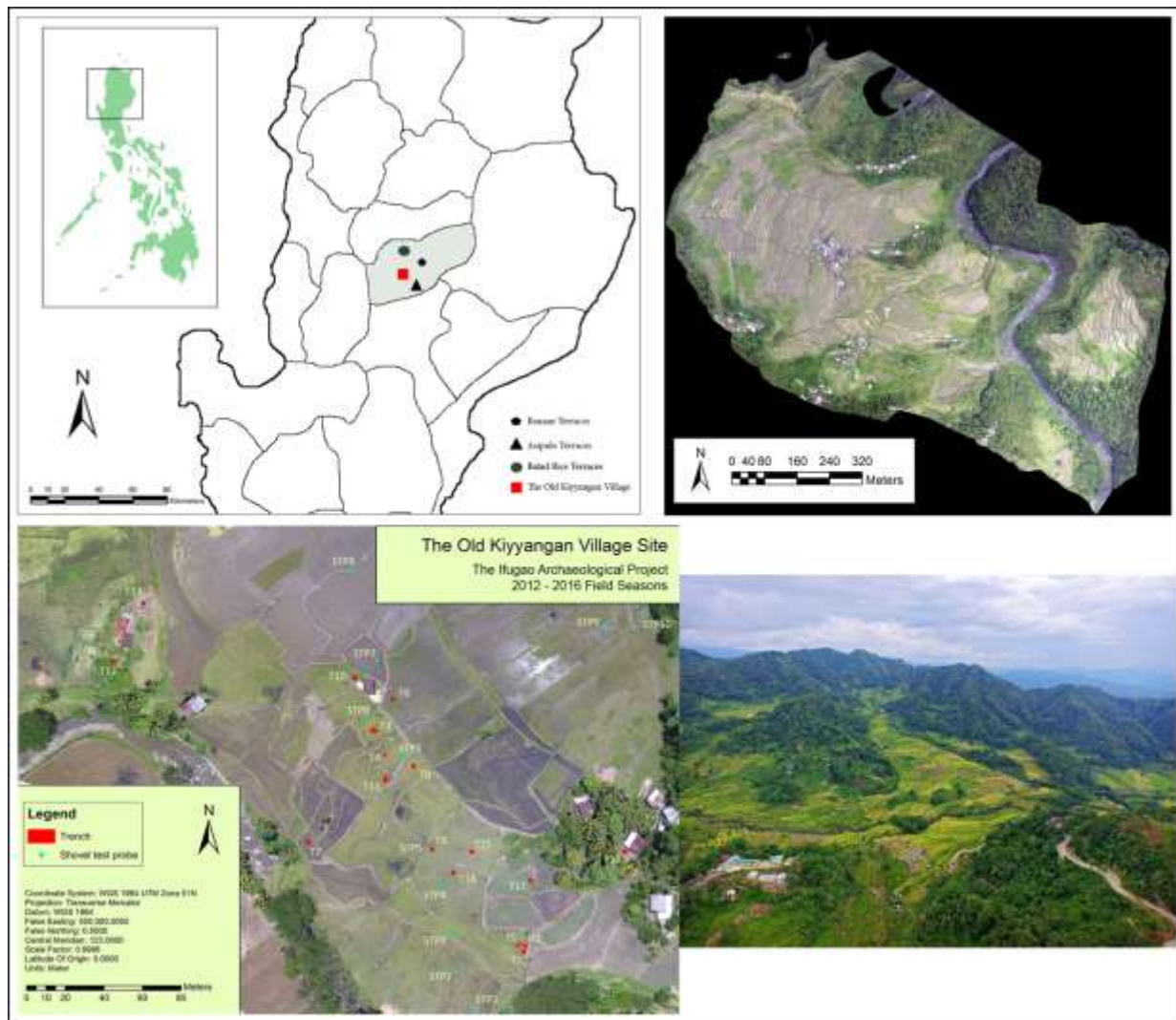
Accepted: date

Published: date



**Copyright:** © 2024 by the authors.

Submitted for possible open access publication under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).



**Figure 1.** Ifugao province (upper left), Batad Rice Terraces (upper right), the OKV site (lower left), and the Nagacadan rice terraces (lower right).

For decades, the dominant narrative, championed by early anthropologists such as Roy Franklin Barton [1] and Henry Otley Beyer [2], posited that the Ifugao Rice were over 2,000 years old. This narrative was more than just a chronological assertion; it was a statement of cultural identity. It presented the Ifugao as custodians of an ancient, unchanging tradition, existing in isolation from the influences and tumults that shaped the rest of the archipelago. In this view, the terraces were not only an agricultural wonder but also a symbol of a pure, uncolonized past. This interpretation has been echoed in academic circles, popular media, and even in the descriptions of the terraces in UNESCO documents, reinforcing the image of the Ifugao as a timeless entity, disconnected from the currents of history.

However, recent archaeological findings have challenged this long-standing belief [3, 4, 5, 6, 7]. Utilizing a combination of radiocarbon dating, archaeobotanical analysis, and ethnohistorical research, these studies suggest a much later inception of the terraces, likely around the period of Spanish colonization in the 16th century. This revelation is not just a mere adjustment of dates; it represents a paradigm shift in how the history of the Ifugao and their iconic terraces is understood. It suggests that rather than being a relic of a distant past, the terraces are a dynamic, living testament to the Ifugao's resilience and adaptability in the face of external influences.

30

31

32

33

34

35

36

37

38

39

40

41

42

43

44

45

46

47

48

49

50

The implications of this new interpretation are profound. For one, it challenges the narrative of the Ifugao and their terraces as isolated and unchanging. It paints a picture of a people who are not mere passive recipients of history but active agents who have continuously adapted and evolved in response to changing circumstances. This view aligns more closely with the oral histories and narratives of the Ifugao community, which have often been sidelined in academic discourse in favor of more 'scientific' interpretations.

Community stories and oral histories are invaluable in this re-contextualization, providing a complementary, as well as supplementary, narrative to the archaeological data. In Ifugao, these oral traditions serve as living records, chronicling the collective memory and societal changes over generations. They provide insights into the cultural significance of the terraces, detailing the struggles and achievements of the Ifugao people that are not always visible in the archaeological record. These narratives often highlight the terraces as symbols of identity and self-determination, countering the narratives of isolation and stasis with tales of dynamism, community cohesion, and resistance to colonial pressures.

These oral traditions offer a nuanced understanding that can challenge and refine archaeological interpretations. They can affirm dates and events, suggest alternative readings of material culture, and illuminate the socio-political structures that facilitated the construction and maintenance of the terraces. For example, the community's recounting of the forced relocations and the strategic establishment of settlements away from Spanish incursions provides context to the changes in settlement patterns inferred from archaeological digs. Moreover, the oral histories of agricultural practices, rituals, and social organization offer a vivid picture of the day-to-day life that shaped the terraces' landscape. When oral histories are integrated into the archaeological discourse, they enrich the narrative, allowing a more holistic reconstruction of the past that acknowledges the active role of the Ifugao in shaping their history and landscape.

Our archaeological work in Ifugao represents a movement towards the decolonization of archaeology. In our work, we define decolonization as the process of re-evaluating and transforming practices to remove colonial biases and structures. It seeks to decenter Western epistemologies, prioritize Indigenous perspectives, and value local knowledge systems on par with scientific methods. This means recognizing and rectifying the historical power imbalances in the interpretation, narration, and stewardship of cultural heritage [i.e., 8, 9, 10]. Decolonizing archaeology involves actively involving descendant communities in the research process, respecting their oral traditions, and acknowledging their sovereignty over their cultural narratives and material past [11,12,13].

### *1.2. Decolonizing Archaeology*

In the context of the Ifugao Rice Terraces, decolonizing archaeology has involved shifting the narrative from a Western-centric interpretation that romanticizes and freezes the Ifugao in time, to one that recognizes their dynamic history of resilience and adaptation. By incorporating the generational timekeeping of Ifugao society and respecting their oral histories, we give credence to the lived experiences of the community that have historically been marginalized in academic discourse. This shift not only provides a more accurate representation of the terraces' history but also returns the agency to the Ifugao people, allowing them to define their identity and history on their terms. Co-author Martin, an Ifugao, argues that if the outside world seeks to understand the Ifugao and their terraces, they look at it from the perspective of the Ifugao people themselves? Martin adds that... "we [the Ifugao] have always understood our past and our world but were it not for the imposition and arrogance of the academic scientist and the rest of the so-called educated world, we would not have strayed from our own knowledge systems".

For the Ifugao, the terraces are more than just an agricultural innovation; they are a living legacy, deeply intertwined with their cultural identity, spirituality, and community life. The traditional Ifugao knowledge systems, which include intricate agricultural

practices, rituals, and social structures, have been maintained and passed down through generations.

The academic scientist often approached the Ifugao and their terraces through a lens of romanticism or exoticism, at times casting them as passive relics of a bygone era rather than as active, adaptive agents of their own history. This distortion stemmed from a combination of colonialist attitudes and a lack of engagement with the community's oral histories, which offer a rich, nuanced perspective on the evolution of the terraces and the people who created and maintained them.

The imposition of these external narratives has had profound implications for the Ifugao. It has led to a disconnect between the Ifugao's self-perception and the way their history is portrayed to the world. The academic community's oversight or dismissal of indigenous knowledge systems has not only misrepresented the terraces' history but has also undermined the Ifugao's agency in their own cultural heritage.

In recent years, there has been a growing recognition of the need to decolonize archaeology and to recenter indigenous perspectives. This involves a conscious effort to understand the Ifugao and their terraces from the viewpoint of the Ifugao themselves. It calls for a collaborative approach that respects and incorporates Ifugao oral traditions and knowledge systems into the historical narrative. Such an approach not only corrects the historical record but also empowers the Ifugao community, allowing them to reclaim their narrative and affirm their identity on the global stage.

By valuing the Ifugao's own knowledge systems and perspectives, we can foster a more authentic and respectful understanding of their history. This shift is crucial not only for the academic integrity of historical research but also for supporting the Ifugao in preserving their cultural heritage for future generations. The Ifugao experience, thus becomes a powerful example of how Indigenous knowledge can illuminate and enrich our understanding of the past, challenging us to rethink the way we engage with and represent the histories of indigenous peoples.

Our work actively resists the exoticization of the Ifugao by reframing the terraces as active cultural landscapes rather than static monuments. The inclusion of local narratives in archaeological interpretation not only enriches our understanding of the past but also supports the Ifugao in safeguarding their intangible heritage. It is a reciprocal process where archaeological practice benefits from the depth of knowledge held within community stories, and the inclusion and synthesis of these stories gain visibility and validation in archaeological narratives.

This decolonized approach is evident in the way the Ifugao community has been integral to the archaeological process, from hypothesis formation to fieldwork and interpretation. Community members are not mere informants; they are collaborators with voices as authoritative as the archaeologists. Their involvement in the Ifugao Archaeological Project has led to the creation of the Ifugao Community Heritage Galleries and the Indigenous Peoples Education Center, which are not only resources for cultural education but also embodiments of the community's ongoing engagement with their heritage.

The decolonization of archaeology is an ongoing and evolving practice, one that demands reflexivity, openness to change, and a commitment to justice and equity. In Ifugao, it is a conscious effort to dismantle the colonial legacy that has long influenced the interpretation of the terraces and to replace it with a collaborative, multidisciplinary approach that honors the sovereignty of the Ifugao over their cultural heritage. This method serves as a model for how archaeologists can and should move forward globally, advocating for a discipline that is inclusive, respectful, and supportive of the communities whose past we seek to understand.

This synergy between archaeological evidence and oral histories is crucial for a more inclusive and accurate portrayal of the past. It emphasizes the need to preserve these oral traditions as integral components of cultural heritage, just as vital as the physical structures themselves. Furthermore, it provides a model for other archaeological endeavors worldwide, advocating for a collaborative approach that respects and utilizes the

knowledge embedded within local communities. As a result, such a confluence of perspectives not only deepens historical understanding but also empowers the descendant communities by centering their voices in the narratives of their own past [6,14].

## 2. ETHNOGRAPHIC ACCOUNTS AND COMMUNITY STORIES

Understanding the passage of time through generational reckoning and genealogical continuity is important in comprehending Ifugao history and culture. In Ifugao society, time is traditionally measured not in years, as per the Gregorian calendar, but in generations. This method of timekeeping is central to their collective memory and is exemplified in narratives concerning the origins of significant landmarks such as the Batad Rice Terraces—one of the five clusters recognized by UNESCO—the extensive terraces in Asipulo, and the community history of Tokak Village in Namal, Asipulo.

The oral histories of the Ifugao provide a glimpse into the chronology of their landscape and culture, particularly through the narratives surrounding the Batad and Asipulo terraces. Local lore, rich in detail and passed down through generations, tells the story of two brothers from Cambulo, a village near Batad. Their discovery of the Batad hillside led to the establishment of a swidden field, marking the beginnings of what would become a significant agricultural and cultural site. Subsequently, one brother brought his family to settle in the area, and together they constructed the terraces that have since become emblematic of Ifugao's rich tradition of rice cultivation. This story, believed to have taken place within the last six generations, illustrates a living history that is intrinsically linked to the land and the community's ancestral lineage.

In a similar vein, the Asipulo terraces, as recounted in the oral history of the Tokak community, were constructed within the past five generations. These narratives underscore a relatively recent and rapid development of terrace farming in these regions, contrasting with the often static and ancient depictions found in external historical accounts.

The story of Tokak village exemplifies the impact of Spanish colonial expeditions on the Ifugao's settlement patterns. Village elders recount how their great grandparents, seeking to maintain autonomy and protect their way of life, were compelled to leave Amduntog—a village closer to colonial centers—and resettle in the more secluded village of Tokak. This strategic relocation allowed the Ifugao to evade direct colonial control and preserve their cultural practices, including rice terrace farming, which has been central to their identity and sustenance.

The return of their descendants to Amduntog following the departure of the Spaniards signifies not just a physical return to ancestral lands but also a cultural reclamation. It underscores the Ifugao's enduring connection to their territory and the resilience of their sociocultural systems amid colonial disruptions. These community stories, passed down through generations, are critical to understanding the nuanced history of the Ifugao. They provide context to the archaeological evidence, enriching our perception of the past and offering a more holistic view that honors the lived experiences and agency of the Ifugao in shaping their history.

The generational approach to history allows for a fluid and evolving understanding of the past, one that is directly connected to the memories and experiences of the community. Such oral traditions not only serve as historical records but also as affirmations of the community's enduring connection to their environment and their continuous adaptation to it. Through these stories, the people of Ifugao maintain a vibrant and ongoing relationship with their history, one that is characterized by resilience, familial bonds, and a deep respect for the terraced landscapes that have sustained them.

Dismissing these oral histories undermines the validity of ethnographic methods and shows disrespect to the Ifugao's worldview as articulated through their community stories. These narratives align closely with the broader Philippine history as recorded in both archival documents and contemporary scholarship. They are not merely stories, they encapsulate the lived experiences of the Ifugao.

Contrary to the notion that the Ifugao rice terraces are 2,000 years old—an assumption unsupported by any archaeological evidence. Recent archaeological and ethnographic data from five major sites including Old Kiyangan Village, Hapao, Nagacadan, Batad, and Banaue suggest a much shorter history. The absence of evidence should not be mistaken for evidence of absence; yet, the lack of archaeological support for the terraces' ancient origins cannot be ignored.

The primary objective of our research in Ifugao goes beyond merely dating the terraces. The terraces exemplify humanity's ability to negotiate environmental constraints and adapt to changing needs, as wet-rice cultivation is integral to Ifugao culture. These terraces represent not just a triumph over environmental challenges but also the aspirations and identities of the Ifugao. It is essential that collective consciousness moves in the direction of fostering an appreciation of the terraces not as static relics of the past but as living landscapes reflecting the ingenuity and resilience of their builders.

The convergence of archaeology with community narratives shed lights on the shared history of human societies and their environments. Archaeological evidence provides tangible proof of past human interactions with landscapes, while community stories offer nuanced insights into these interactions. The Ifugao Archaeological Project corroborates and enriches community narratives, offering a depth of temporal understanding that enhances our appreciation of cultural practices and ecological wisdom.

In the context of climate change, this synergy becomes a valuable resource. Insights from archaeology combined with community stories offer a comprehensive view of historical climate patterns, adaptive strategies, and resilience. This knowledge is crucial for creating climate adaptation and mitigation strategies that are both scientifically sound and culturally sensitive. Understanding how communities have historically navigated environmental challenges provides invaluable lessons for today's climate action.

The integration of archaeological findings and Indigenous narratives particularly shines in the Ifugao Rice Terraces' context. It reveals a dynamic history of sustainable adaptation to climatic challenges, with indigenous knowledge guiding effective water and soil management techniques. This indigenous wisdom, embedded in local stories and integrated with the landscape's history, lays a robust foundation for climate-resilient agricultural practices. Moreover, this collaboration extends to natural resource management, evident in the Ifugao's *muyung* traditional forestry system [15,16] (Camacho et al. 2016; Serrano and Cadaweng 2005).

Archaeology paired with indigenous narratives offers insights into historical forestry practices, sustainable resource extraction methods, and community-led conservation efforts. This holistic approach recognizes the ecological wisdom encoded in indigenous knowledge, offering vital lessons for contemporary climate adaptation.

Embracing indigenous knowledge in climate adaptation strategies acknowledges its role as a repository of strategies finely attuned to environmental nuances. The collaborative efforts of archaeology and Indigenous knowledge bridge historical resilience with modern scientific insights, fostering a culturally attuned, sustainable, and wisdom-rooted climate adaptation paradigm.

Finally, revising the narrative to reflect the recent origins of the terraces empowers Ifugao communities, dispelling colonial myths and promoting heritage conservation programs developed and implemented by the communities themselves. Debates over the dating of the terraces risk exoticizing the Ifugao and romanticizing the past. While dating is essential, it should be secondary to understanding the terraces' cultural context.

### 3. NATURE OF ARCHAEOLOGY: HYPOTHESIS TESTING

Archaeology, often misconstrued as a quest for definitive truths about our past, is fundamentally a discipline grounded in the formulation and testing of hypotheses. Rather than seeking irrefutable facts, archaeologists engage in a dynamic process of hypothesizing, gathering evidence, and revising understandings based on new findings. This

approach is illustrated in the recent archaeological work on the Ifugao Rice Terraces in the Philippines, which has led to a significant re-evaluation of their age and origins.

For many years, the prevailing belief, supported by early anthropological studies, was that the Ifugao Rice Terraces were over 2,000 years old. This supposition was not only an academic conjecture but also a part of the national and cultural identity of the Philippines. However, the essence of archaeological inquiry is not to cement such narratives as absolute truths but to continuously test and reevaluate them in light of new evidence and methodologies.

Acabado's research, a continuation of his graduate work [15,16,18], presented a contrasting hypothesis: the terraces were built much later, possibly as a response to Spanish colonization in the 16th century. This proposal was not an attempt to uncover a 'final truth' but rather to challenge the existing narrative based on emerging data and perspectives. The hypothesis was tested through various methods, including radiocarbon dating, archaeobotanical analysis, and ethnohistorical research, all standard tools in the archaeologist's kit for hypothesis testing.

The Ifugao Archaeological Project focused its investigations on the Old Kiyangan Village (OKV), a site integral to Ifugao history and mythology. The scientific approach taken by the IAP was methodical and evidence-based. They uncovered artifacts, such as locally-produced and imported beads, a crocodile tooth, and infant burials, which provided insights into the Ifugao's interactions and adaptations over time. These findings were crucial in testing the new hypothesis about the timing and nature of terrace construction.

To test this hypothesis, the team employed a range of methods. Radiocarbon dating of charcoal samples, analysis of pollen and phytoliths, and careful stratigraphic excavation provided data points. Each method offered a piece of the temporal puzzle, contributing to a body of evidence that was then evaluated against the hypothesis.

The results of these tests were surprising. Instead of supporting the millennia-old narrative, the evidence pointed to a much more recent construction, aligning with the period of Spanish contact. This finding challenged the traditional view but was consistent with the nature of scientific inquiry, which is characterized by its openness to change when faced with new, robust evidence.

The shift in understanding about the age of the Ifugao rice terraces underscores a fundamental aspect of archaeology: it is a discipline more about asking the right questions and less about finding definitive answers. Archaeology does not deal in absolutes; rather, it embraces uncertainty and change as integral parts of understanding the past. Each new piece of evidence can redefine existing narratives, demonstrating that our understanding of history is fluid and subject to revision.

This perspective is crucial in considering the role of archaeology in society. By not positioning itself as a seeker of absolute truth, archaeology allows for multiple narratives and interpretations to coexist. This approach is particularly important in areas like the Ifugao province, where cultural identity and historical narratives are deeply intertwined. The re-evaluation of the terraces' age does not diminish their cultural and historical significance; instead, it enriches our understanding of the Ifugao people's resilience, adaptability, and agency.

Moreover, the case of the Ifugao Rice Terraces highlights the importance of integrating scientific inquiry with local knowledge and oral histories. The Ifugao community's narratives and memories played a crucial role in shaping the hypothesis and guiding the archaeological investigation. This integration underscores the importance of a holistic approach in archaeology, one that respects and incorporates various sources of knowledge.

The evolving understanding of the Ifugao rice terraces' history exemplifies the nature of archaeology as a discipline focused on testing hypotheses rather than seeking immutable truths. This case study demonstrates how archaeology is a dynamic and iterative process, one that adapts and advances as new evidence emerges. It reminds us that our grasp of the past is always provisional, and that openness to re-evaluation and revision is



essential in the pursuit of knowledge. In this way, archaeology not only helps us understand our history but also teaches us about the complexity and fluidity of the human experience.

The Ifugao case exemplifies the iterative nature of archaeological research. Hypotheses are constructed based on the best available information, then tested against empirical data. If the data aligns, the hypothesis is strengthened; if not, it must be revised or discarded. This process is not unique to archaeology but is the hallmark of the scientific approach across disciplines.

Through this example, we see that archaeology, like all science, is a dynamic process. It is a discipline that evolves with each new discovery, where hypotheses are continuously refined to enhance our understanding of the human past. Far from seeking immutable truths, archaeology embraces the complexity and variability of human history, offering insights that are as provisional as they are profound.

#### 4. ARCHAEOLOGICAL DATA

The recent archaeological work in Ifugao, Philippines, continues and expands upon Stephen Acabado's prior research [15,16,17,18,19,5,10], suggesting the iconic Ifugao rice terraces were constructed in response to Spanish colonization. This challenges the older belief that the terraces are millennia old and reshapes the understanding of the region's history and the indigenous Ifugao people.

The Ifugao Archaeological Project's (IAP) focus on the Old Kiyangan Village (OKV) has been pivotal in uncovering the area's past. Fray Molano, in a Spanish document from 1801, described OKV as a large settlement—a contrast to its portrayal as isolated and unchanging. Robert Maher's [23] initial research at OKV provided important chronological data, indicating the site was much older than previously understood, with findings suggesting Ifugao ancestors settled there.

The selection of OKV for archaeological exploration was driven by the community's desire to investigate their origins. Despite its transformation into paddy fields, historical records from the American colonial period mention the Village of Otbobon, another name for OKV, suggesting a relocation by 1869 [24]. The modern town of Kiangan's proximity to the original OKV site highlights shifts in settlement patterns.

Robert Maher's [23] initial investigations into OKV, now a rice field believed to have been transformed into a paddy field just before World War II, provided important chronological data. Maher's excavation yielded two Thermoluminescence (TL) dates, ranging between 1130 CE and 1230 CE, indicating a much earlier occupation of the site than previously understood (Table 1). This finding is crucial, as OKV is deeply ingrained in the cultural and mythical history of the Ifugao. According to local myths, Old Kiyangan was the village where the first Ifugao ancestors settled and where they received divine knowledge of wet-rice cultivation. These narratives also suggest that prior to the development of the terraces, taro was the primary crop cultivated by the Ifugao. Maher's research in the region set out to provide archaeological evidence for the origins of the Ifugao and their rice terraces [20,21,22], which provided the initial radiocarbon (Table 2).

**Table 1.** Radiocarbon determinations from Banaue Ifugao, obtained by Maher and Conklin.

Site/Locality	Depth (cm)	Lab #	Material	<sup>14</sup> C BP	Cal. CE (2 $\sigma$ – 95%) (recalibrated using IntCal13)	<sup>14</sup> C Sample context	Reported by
<b>If1 - Nabyun</b>	91	GX0668	<i>M. sinensis</i>	205 ± 100	1493-postbomb	Pond-field	[25]
<b>If2 - Nabyun</b>	91	GX1900	No data	325 ± 110	1408-postbomb	House Platform	[25]
<b>If2 - Nabyun</b>	90	GX1901	No data	695 ± 100	1052-1435	Midden	[25]
<b>If2 - Nabyun</b>	90	BX2184	No data	735 ± 105	1043-1413	Midden	[25]



If3 - Banaue	4.4	GX2183	No data	2950 ± 250	1867-540BCE	House Platform	[25]
Gawwa, Poitan	5	GX3138	No data	530 ± 140	1192-1792	Underground chamber	[25]
Gawwa, Poitan	5	GaK5238	No data	530 ± 100	1273-1631	Underground chamber	[25]
Lugu	No data	UGA2515	No data	395 ± 60	1430-1639	Terrace embankment post	[27]
If20 - Banghallan	50	GaK6442	No data	890 ± 310	434-1647	Village edge	Maher 1985
If20 - Banghallan	60	UGA1541	No data	1340 ± 375	176BCE-1388CE	Village edge	[25]

Table 2. Maher's TL dates in the OKV Site and adjacent Bintacan Cave.

357

Site	Level Info	TL Dates	Reported by
Bintacan Cave	Level F	1620 BP Alpha 476	[29]
Bintacan Cave	Level E	1420 BP (± 20%) Alpha 480	[29]
Bintacan Cave	Level C	760 BP (± 20%) Alpha 479	[29]
Old Kiyangan Village	No data presented	820 BP Alpha 566	[23]
Old Kiyangan Village	No data presented	720 BP Alpha 671	[23]

358

Between 2012 and 2016, the IAP executed twenty excavation units at OKV. The findings from these excavations have been revealing, indicating that the arrival of the Spanish in the region was a catalyst for significant changes in the village. Most notably, the shift to wet-rice cultivation seems to have occurred concurrently with the Spanish influence, supported by AMS dates. The excavations in OKV unearthed a variety of artifacts, including locally-produced and imported beads, a crocodile tooth, imported metal adornments, and infant burials [30,31,32,33,34,35]. These discoveries are indicative of the active role the Ifugao community played in broader pre-colonial and colonial interactions within the Philippines, challenging the notion of their cultural and economic isolation. The initial phase yielded seven radiocarbon dates from the terraced fields of Banaue (Table 3), and subsequent excavations at the Old Kiyangan Village (OKV) added nineteen more dates (Table 4). These were complemented by extensive analyses, including sherd residue (Eusebio et al. 2015), wood charcoal, and microfossil studies, to determine the advent of wet-rice agriculture in the region.

359

360

361

362

363

364

365

366

367

368

369

370

371

372

Table 3. AMS dates from Bocos rice terraces, Banaue, Ifugao [15].

373

Lab. No.	Unit	DBS	Layer	CRA	<sup>13</sup> C	Cal AD (BCal)	Post-AD 1585 Probability*
AA78973	Mamag	0.855	II	119±38	25.2	1687-1862	74.6%
AA78974	Mamag	1.3m	III	485±39	-27.5	1325-1460	74.6%
AA78971	Rasa	0.35m	II	313±38	-24.4	1620-1800	98.5%
AA78972	Rasa	.52m	III	164±38	-26.0	1527-1757	98.5%
AA78969	Linagbu	0.55m	II	180±38	-26.5	1736-1867	99.9%
AA78970	Linagbu	0.75m	III	131±38	-29.3	1663-1753	99.9%
AA78975	Achao	.075m	II	193±38	-25.0	1646-1809	N/A

\*Probability analyses (Bayesian modeling) of pre-Spanish or post-Spanish construction of the Bocos rice terraces walls in Banaue, Ifugao [15].

374

Table 4. Radiocarbon determinations recovered from Ifugao between 2012 to 2016 [5].

Depth (cm)	Lab Number	Location	Material/Trench	<sup>14</sup> C BP	Cal. BP (2 σ)	Cal. CE (2 σ)	Context
30-40	Beta-356307	OKV	organic sediment/8	190 ± 30	260-200	1640-post-1950	Rice field
50-60	UCIAMS-183276	OKV	Wood charcoal ( <i>P. insularis</i> )/14	415±15	510-469	1440 - 1480	Rice field
55-73	Beta-394185	OKV	bone collagen/8	410 ± 30	530-470	1405-1445	Mortuary
60-70	UCIAMS-183272	OKV	Wood charcoal ( <i>P. insularis</i> )/14	345±15	477-317	1470 - 1633	Rice field
65-70	Beta-356306	OKV	organic sediment/8	620 ± 30	680-620	1280-1390	Rice field
80-90	UCIAMS-183273	OKV	Wood charcoal ( <i>P. insularis</i> )/14	570±15	634-537	1315 - 1415	Rice field
80-90	Beta-394182	OKV	bone collagen/8	600 ± 30	730-670	1265-1380	Mortuary
90-100	CIAMS-183274	OKV	Wood charcoal ( <i>P. insularis</i> )/14	665±15	669-564	1280 - 1385	Rice field
90-100	Beta-421036	OKV	charcoal/14 ( <i>P. insularis</i> )	660 ± 30	690-630	1280-1390	Rice field
90-100	Beta-421037	OKV	potsherd residue/14	590 ± 30	610-550	1300-1415	Rice field
90-100	D-AMS 003446	OKV	Organic sediment/9	861 ± 25	899-700	1052-1250	Rice field
100-110	D-AMS 003447	OKV	Organic sediment/10 (fill)	1252 ±37	1279-1075	672-876	Rice field
100-110	D-AMS 003448	OKV	Organic sediment/10 (dark midden soil)	292 ±27	456-291	1495-1660	Rice field
100-110	Beta-356305	OKV	organic sediment/8	720 ± 30	810-750	1220-1280	Rice field

---

<b>110-120</b>	D-AMS 003445	OKV	Organic sediment/9	672 ± 28	676-561	1274-1390	Rice field
<b>110-120</b>	Beta-32953	OKV	organic sediment/3	780 ± 30	741-669	1160-1260	Rice field
<b>120-144</b>	Beta-394184	OKV	bone collagen/9	800 ± 30	767-675	1045-1220	Mortuary
<b>130-140</b>	Beta-329552	OKV	organic sediment/3	770 ± 30	734-668	1050-1240	Rice field
<b>150-160</b>	Beta-329551	OKV	organic sediment/3	1000 ± 30	967-799	900-1020	Rice field

Excavations at OKV over several field seasons resulted in the opening of 21 trenches and 10 shovel test probes, uncovering over 20,000 artifacts, predominantly earthenware ceramics, as well as faunal, archaeobotanical samples, and human remains, mostly infant burials. Radiocarbon dating at OKV employed diverse materials—bulk soil, wood charcoal, bone collagens, and sherd residue—all showing a consistent stratigraphy. The alignment of bulk soil dates within situ radiocarbon dates, despite potential contamination risks, suggests rapid deposition within a short timeframe.

Paleoethnobotanical analysis indicated a potential presence of wet-rice cultivation dating back to 675 years before present (BP), but low counts of rice phytoliths suggested possible displacement within the soil column due to water seepage [36,37], casting doubt on earlier cultivation theories. Residue analysis from pottery did not indicate rice production, but instead showed evidence of taro consumption, further supporting the argument for the later emergence of wet-rice agriculture in Ifugao.

Analyses of bulk soil, charred residues, and botanical data from three excavation trenches suggest that the predominant crop in the OKV prior to 1650 CE was not wet-rice, as previously believed, but taro (*Colocasia esculenta*). The absence of wet-rice cultivation before the mid-17th century was corroborated by pollen, phytolith, and starch analyses performed on sherd residues from these trenches, further dismantling the theory of an ancient origin for rice agriculture in the region.

Additionally, the stratigraphy of the site revealed a significant increase in wood charcoal within Layer 2, dated to around the 1600s (Figure 2). This finding could indicate a heightened demand for wood or point to deforestation, reflecting a change in landscape management or environmental conditions. Crucially, no rice or rice-associated weeds were detected in any soil or charred residue samples predating 1650 CE, supporting the hypothesis of a post-contact introduction of wet-rice agriculture.

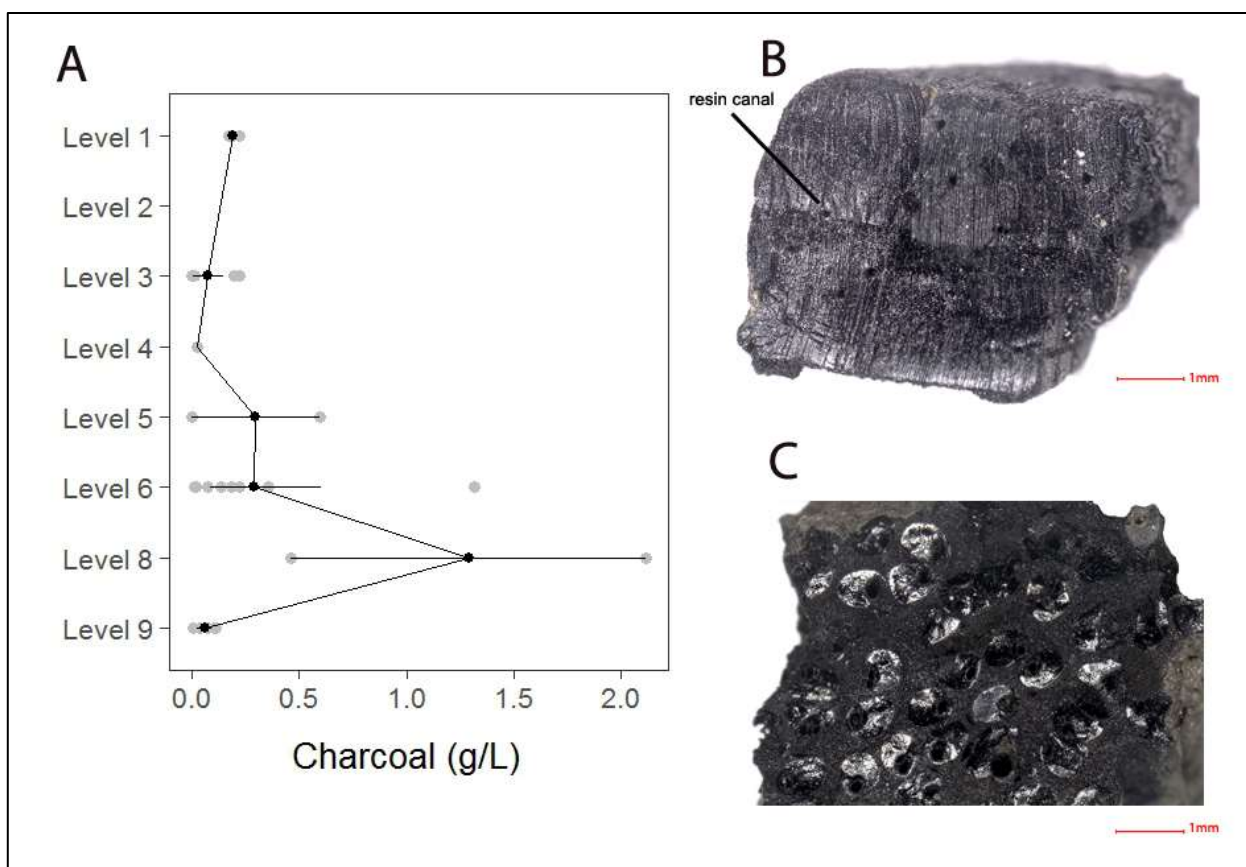


Figure 2. (A) The densities of wood charcoal (grams per liter) recovered in deposits from Trench 14, where the level (i.e. depth in 10cm increments) is represented on the vertical axis, and the density is

represented on the horizontal axis. The gray dots illustrate the values in individual samples, and the black dots are the bootstrapped mean densities of each level with 95% confidence intervals (the black line within a level). The line between levels connects the means of each level. (B) and (C) are the transverse (cross) sections of identified wood charcoal, where (B) is identified as Benguet pine with a resin canal highlighted from Trench 14, level 8, and (C) is a specimen from the palm family from Trench 16, level 2 [5].

The environmental transformation indicated by the archaeological record was also marked by a notable influx of imported goods, a surge in the remnants of animals used in rituals, and the adoption of wet-rice farming practices. These shifts signal a broader change in the Ifugao way of life, aligning with the period of increased external contact and trade [38].

This multi-evidentiary approach has been crucial in constructing a robust chronological model for the inception and expansion of the Ifugao terracing systems. Ethnographic comparisons highlight that wet-rice cultivation necessitates complex social structures. These findings support the hypothesis that the Ifugao terraces, as seen today, were constructed within a 200- to 300-year period, a rapid development indicating advanced socio-political organization suitable for intensive wet-rice farming.

#### 4.1. Data and Explanatory Modeling

The lack of evidence for the 2,000-year-old origin of the terraces across five major Ifugao sites has led to the discrediting of this long-held belief, with recent archaeological and ethnographic data suggesting a much shorter history. The significance of local time reckoning in Ifugao, which relies on generational memory rather than calendar years, has been crucial in contextualizing this narrative shift. Community stories from the Batad Rice Terraces, Asipulo terrace system, and Tokak Village provide a vivid account of the terraces' origins, tied closely to the Ifugao's response to Spanish colonialism, rather than a distant, pre-colonial past.

Archaeobotanical and pottery residue data have revealed the continuation of taro as a staple carbohydrate, even after the Spanish arrival in the adjacent lowlands of the Magat Valley. The maintenance of traditional burial practices and dietary habits through faunal isotopic signatures indicates that the Ifugao retained their way of life despite the external pressures of colonialism.

These datasets collectively suggest that the Ifugao responded rapidly and adaptively to Spanish incursion, upholding their group identity and cohesion through ritual and household practices. The AMS determinations and spatial analyses of the terraces, alongside archaeobotanical datasets, point to an absence of pre-1600s wet-rice cultivation, challenging the narrative of an ancient terracing tradition.

The Ifugao terraces stand not only as a testament to humanity's ability to adapt to environmental constraints but also as a reflection of the Ifugao's identity and resistance against colonial forces. The implications of these findings are not limited to local history but contribute to broader discussions on agricultural systems' archaeology, requiring a comprehensive approach that encompasses local knowledge and generational narratives.

Spanish colonial documents record active irrigation systems in only two regions of the Philippines during the early years of conquest: Bicol and the Magat Valley. No other archaeological or historical investigations have documented subsistence patterns before and after the Spanish conquest. Therefore, while dating the terraces is crucial, it is secondary to the broader aim of understanding the terraces' role in Ifugao culture and heritage.

In the neighboring region of Bontoc, Bodner's [39] work has provided compelling evidence for the later inception of wet-rice cultivation, postdating 1600 CE. This assertion is grounded in the notable absence of archaeobotanical data indicative of wet rice prior to the 1600s. Supporting this perspective, an accumulation of data from various scholarly pursuits—including Maher's investigations, Bodner's own dissertation, Conklin's landscape research, and the ongoing Ifugao Archaeological Project—converges to suggest a

significant shift in agricultural practices to wet-rice cultivation occurring relatively recently.

Further strengthening this argument, a genomic study of rice varieties in the Cordillera, including the Ifugao's revered tinawon rice, has shed light on the crop's lineage. According to Alam et al. [40], the highland rice varieties can trace their ancestry to Indonesian strains, suggesting a southern origin and diffusion into the highlands. This genomic lineage contradicts the theory of an ancient, indigenous development of wet-rice cultivation in the Ifugao region, instead pointing to a more recent introduction and adaptation of these rice varieties. Together, these interdisciplinary research efforts paint a picture of dynamic agricultural evolution in the Cordillera, characterized by later adoption and continuous innovation.

This body of work underscores the need for data-driven discussions about the dating of the Ifugao terracing tradition, advocating for a narrative that recognizes the terraces as a dynamic cultural landscape shaped by historical contingencies and the Ifugao's resilient spirit.

## 5. ARCHAEOLOGY AND COMMUNITY

The comprehensive archaeological investigations spearheaded since 2007 have significantly reshaped the narrative of the Ifugao Rice Terraces. This intensive research, however, is more than a mere quest for chronological accuracy; it is an exploration into the lived experiences of the Ifugao people, as evidenced by both material culture and enduring oral traditions. The integration of archaeological findings with local narratives has revealed a history marked not by stasis and isolation but by dynamism, resilience, and adaptation.

The ethnographic accounts and community stories of the Ifugao stand as testaments to the society's active participation in their history. These narratives, passed down through generations, serve not only as historical records but also as expressions of the Ifugao's identity and response to external pressures, particularly Spanish colonization. The recollections of the origins of landmarks such as the Batad Rice Terraces and the Asipulo terrace system, underscore a temporal understanding deeply ingrained in Ifugao culture. Moreover, the tales of strategic relocations during colonial times, such as those from Amduntog to the more remote Tokak, illustrate the Ifugao's agency in preserving their way of life.

The archaeological record, bolstered by radiocarbon dating and analyses of pottery residue and paleoethnobotanical samples, has supported the contention that the terraces are of more recent origin than previously thought. These data have challenged the long-held belief that the terraces are over two millennia old, a belief unsupported by evidence from significant sites within the region. The findings suggest a rapid socio-economic transformation in Ifugao society, coinciding with the emergence of wet-rice agriculture and the introduction of new goods and practices, indicating an era of significant change catalyzed by, but not succumbing to, colonial influence.

This cultural chronology is pivotal in understanding the terraces not as static monuments but as vibrant landscapes that encapsulate humanity's enduring adaptability. The terraces are symbols of the Ifugao's triumph over environmental and political challenges, embodying the aspirations and ingenuity of their creators. Recognizing the terraces as part of a living culture is essential for fostering respect for Ifugao heritage and for ensuring the terraces' preservation for future generations.

The role of indigenous knowledge, particularly the muyung traditional forestry system, further exemplifies the Ifugao's sustainable management of natural resources. The confluence of archaeological evidence with this indigenous wisdom offers insights into historical practices that can inform contemporary climate adaptation strategies. Embracing this knowledge is crucial for crafting solutions that are not only effective but also respectful of cultural traditions.

Moreover, by integrating community narratives with archaeological research, a more nuanced picture of the Ifugao's past emerges. These stories provide context and color to the archaeological canvas, enriching our understanding of the terraces and the people who built and maintain them. The Ifugao Archaeological Project has shown that the terraces' recent origins do not diminish their value; rather, they highlight the Ifugao's remarkable adaptability and the terraces' ongoing significance as cultural and ecological marvels.

As global discussions on climate action and cultural conservation continue, the insights gleaned from the Ifugao terraces serve as a valuable resource. The Ifugao's historical experiences, coupled with archaeological data, provide a model for understanding how societies can navigate environmental challenges while maintaining their cultural integrity.

The narrative of the Ifugao rice terraces is being rewritten. It is a narrative that respects the intersection of archaeology and oral history, acknowledges the complex interplay between the Ifugao and their environment, and recognizes the terraces as a symbol of cultural resilience. This narrative shift has profound implications for heritage conservation, climate action, and our understanding of humanity's relationship with the land. As we move forward, it is essential to continue valuing and incorporating the voices of the Ifugao community, ensuring that their history is told with accuracy and respect, and that their wisdom is heeded in the face of contemporary challenges.

## **6. CHANGING THE NARRATIVE, EMPOWERING DESCENDANT COMMUNITIES**

The Ifugao Archaeological Project stands as a testament to the successful integration of community perspectives with archaeological data, a practice that has been pivotal in reshaping the narrative of the Ifugao Rice Terraces. By engaging local narratives and participation, this project has moved beyond the confines of traditional, colonial methodologies that often perpetuate a romanticized and static view of indigenous communities. Instead, it has revealed the terraces as living emblems of the Ifugao's resistance and adaptability through centuries of sociocultural transformations.

The project has catalyzed a re-evaluation of the terraces' history, aligning archaeological findings with the oral histories of the Ifugao. This has disrupted the academic and popular portrayal of the terraces as ancient and untouched by historical events, instead highlighting the Ifugao's active role in their evolution. The Ifugao's own generational timekeeping and narratives offer an invaluable insight into the cultural significance of the terraces, detailing a history of dynamism, community cohesion, and resilience against colonial pressures.

Furthermore, the IAP's collaborative approach has empowered the Ifugao community, allowing them to reclaim their narrative and cultural heritage. The development of the Ifugao Community Heritage Galleries and the Indigenous Peoples Education Center (Figure 3) exemplifies the tangible benefits of this inclusive practice. These centers not only serve as repositories of Ifugao material culture but also as educational resources that enable the development of local history curricula, thereby preserving indigenous knowledge for future generations.





**Figure 3.** Participants of the pilot IPED teacher-workshop; the prehistory gallery of the Heritage Galleries; and grade five students completing one of the IPED heritage learning modules that we developed.

Such practices exemplify the decolonization of archaeology, defined as the process of re-evaluating and transforming practices to remove colonial biases and structures. Decolonization in archaeology prioritizes indigenous perspectives and knowledge systems, seeking to correct historical power imbalances in the interpretation and stewardship of cultural heritage. This approach emphasizes the need for descendant communities to be actively involved in the research process, ensuring their oral traditions and sovereignty over their cultural narratives and material past are respected and integrated into the historical narrative.

The Ifugao experience showcases how the integration of community voices with archaeological research can lead to a more accurate and respectful understanding of the past. It demonstrates that the decolonization of archaeology is not only possible but necessary for the discipline to evolve in a way that is inclusive, equitable, and just. The IAP exemplifies the paradigm of community archaeology, where local narratives and participation fundamentally reshape the interpretation and conservation of cultural heritage. This inclusive approach has illuminated the Ifugao rice terraces not merely as UNESCO-recognized aesthetic monuments but as living emblems of resistance against colonial imperialism—a legacy enduring through centuries of sociocultural transformations.

Community archaeology in Ifugao is not an isolated phenomenon. Around the world, similar movements have been gaining momentum, recognizing the value of incorporating local voices into archaeological narratives. In Australia, Indigenous archaeology has become a vital practice, with Indigenous Australian communities working alongside archaeologists to protect and interpret their ancestral lands [41,42,43]. This collaboration

has enabled a deeper understanding of the Indigenous Australian history and culture, which spans tens of thousands of years.

Moreover, in Africa, community archaeology projects have engaged with local communities to explore pre-colonial history, often overshadowed by the focus on ancient monuments like the pyramids of Egypt [e.g., 44, 45]. These projects not only uncover rich local histories but also empower communities by involving them in the preservation and interpretation of their heritage.

The significance of community participation in archaeology is multifaceted. It democratizes the process of historical inquiry, acknowledges the enduring presence of indigenous cultures, and ensures that heritage conservation is not just an academic exercise but a communal endeavor. By combining traditional knowledge with archaeological findings, communities gain a voice in telling their own stories—a process that validates their history and identity.

The IAP's community-based approach also has broader implications for global heritage conservation. By demonstrating the tangible benefits of inclusive practices, it sets a precedent for similar initiatives worldwide. It underscores the importance of local engagement in preserving not only the physical remnants of the past but also the intangible aspects of culture that give meaning to these relics.

In the Ifugao case, the terraces are more than agricultural feats; they are a testament to a people's ingenuity and resilience. The community's involvement in the IAP has revitalized interest among the younger generation, inspiring them to delve into their history and to value the disciplines of anthropology and archaeology. This renewed interest has the potential to create a cadre of young Ifugao who are not only aware of their cultural heritage but are also equipped to preserve and promote it.

The integration of community voices with archaeological expertise in Ifugao provides a model for how heritage sites around the world can be managed and interpreted. It shows how the past can be a source of pride and identity for contemporary communities and how archaeology can serve as a bridge between the past and the present. This collaborative model can inspire similar efforts globally, where local communities become active participants in the conservation and interpretation of their cultural heritage.

### 6.1. Nationalism and Assimilation

In the discourse on the relationship between indigenous identities and the concept of the nation-state, there is often a perceived dichotomy. The critique of positioning indigeneity in opposition to nationalism highlights a critical issue in contemporary debates about identity, culture, and politics [46,47]. This section aims to explore this theme and present examples where the empowerment of indigenous communities contributes to, contests, and redefines the notions of nationalism.

Nationalism, in its most common understanding, is the ideology that emphasizes the interests of a particular nation, as a whole, with the intent of gaining and maintaining the nation's sovereignty over its homeland [48] (page 110). This perspective often seeks to homogenize the nation's culture, history, and identity, sometimes at the expense of the unique and diverse cultures within its borders, particularly those of indigenous peoples. The critique posits that by framing the relationship between indigeneity and nationalism as adversarial, we fail to appreciate the more nuanced interactions and potential synergies between them.

Indigenous movements worldwide have shown that their goals do not always align with the traditional narrative of nationalism [i.e., 49,50]. Instead, they often seek to protect their cultural heritage, assert control over their traditional lands, and gain recognition of their rights, which may conflict with the state's interests. However, by examining various global contexts, we can see that the relationship between indigeneity and nationalism is not inherently antagonistic and can, in fact, be complementary.

### 6.2. Indigenous Empowerment Globally

In Japan, the Ainu, an indigenous people of Hokkaido, have historically faced marginalization. However, recent cultural revitalization efforts, such as the establishment of the Ainu Cultural Promotion Act [51] and the opening of the Upopoy National Ainu Museum and Park [52], highlight how indigeneity can be celebrated within the national narrative. These initiatives have not only empowered the Ainu community by preserving and promoting their distinct cultural identity but have also enriched the cultural mosaic that constitutes the Japanese nation.

In Bolivia, the election of Evo Morales, an Aymara indigenous leader, as the president of the country, illustrates how indigenous identity can be integrated into national politics. Bolivia's recognition as a plurinational state encapsulates the idea that a nation can embrace multiple nationalities, cultures, and languages within its framework [53]. This approach acknowledges the unique contributions of indigenous communities to the nation's history and identity, affirming their place within the national fabric rather than excluding them.

Another significant example is the Swedish Supreme Court's ruling in the Girjas case recognized the Sami people's rights over their traditional lands, setting a precedent for indigenous land rights within the national legal system [54]. This victory demonstrates how indigenous claims can be acknowledged and respected by state institutions, leading to a reformation of the legal framework in a way that validates and protects indigenous stewardship of the land.

### *6.3. Economic Empowerment through Indigenous Knowledge*

The Quechua people in Peru have become internationally recognized for their expertise in cultivating quinoa, a traditional crop. This recognition has brought economic benefits to the Quechua and has highlighted the value of indigenous agricultural practices [55]. By integrating traditional knowledge with national economic objectives, indigenous communities can reshape economic models to be more sustainable and equitable.

In addition, the International Indigenous Peoples Movement for Self-Determination and Liberation (IPMSDL) operates beyond national borders, emphasizing that indigenous identity transcends the confines of the nation-state. This movement shows how indigenous solidarity can foster a global network that advocates for indigenous rights, demonstrating that the principles of indigeneity can inform international cooperation and understanding [56].

These examples suggest that the interplay between indigeneity and nationalism is not merely oppositional but is a dynamic relationship that has the potential to enrich both concepts. Rather than pitting one against the other, a more nuanced approach would be to understand how indigenous movements can contribute to a more inclusive form of nationalism that recognizes diversity as a strength.

In weaving a new story about indigenous peoples within the national narrative, it is imperative to move beyond merely invoking colonial or decolonial signifiers. A more comprehensive approach would involve an honest engagement with the historical and ongoing impacts of colonization and the unique contributions of indigenous communities to the nation's history, culture, and economy. This approach requires a commitment to dialogue, recognition of indigenous sovereignty, and a willingness to re-evaluate and reform existing political and legal frameworks.

In the Philippine context, the Ifugao rice terraces stand as a symbol of the ingenuity and resilience of indigenous people. Recognizing the value of the terraces and the need for their preservation involves acknowledging the Ifugao people's role in their creation and maintenance. It means integrating their knowledge and practices into conservation efforts and ensuring that their voice is central in any development or research project that concerns their heritage.

### *6.4. Inclusive National Identity*

Our approach to the archaeological practice in Ifugao offers a compelling example of decolonizing methodology that aligns with indigenous movements in the Philippines. Our work challenges the traditional colonial narratives that have often defined the history and significance of sites like the Ifugao rice terraces, providing a framework for understanding these landscapes that is rooted in the community's own history and knowledge systems.

We emphasize the importance of community engagement in archaeological research. This involves integrating indigenous knowledge and oral histories with archaeological methods to construct a more holistic understanding of the past. By doing so, he not only questions the colonial underpinnings of historical narratives but also elevates the role of the Ifugao people as custodians of their own history.

The decolonial perspective offered by our work engages with earlier discourses on indigenous peoples' movements in the Philippines by validating their narratives and recognizing their agency. Instead of treating indigenous communities as mere subjects of research, his approach involves them as active partners, thereby disrupting the power dynamics that have traditionally characterized archaeological practice.

Furthermore, our work does not shy away from the theoretical or political implications of decolonization. While it is deeply embedded in the practical aspects of archaeological work, such as site excavation and material analysis, it also confronts the theoretical frameworks that have historically marginalized indigenous perspectives. By advocating for a participatory approach to archaeology, we implicitly critique the political structures that have perpetuated colonial attitudes in the discipline.

In terms of engaging with the broader movements for indigenous rights in the Philippines, our decolonial approach reinforces the political aims of these movements. It recognizes the sovereignty of indigenous peoples over their cultural heritage and supports their struggle for self-determination. The emphasis on community collaboration ensures that the fruits of archaeological research benefit the indigenous communities themselves, whether through education, tourism, or reinforcing land claims.

Our decolonial methodology in archaeological practice is not merely an academic exercise. It is a form of activism that supports the broader goals of indigenous peoples' movements in the Philippines. By engaging with the community and placing their knowledge at the forefront, our work exemplifies how decolonization can be both a practical and a political act, addressing the call for a more inclusive and just representation of the past.

The Ifugao case has shown that community archaeology, though not perfect and not an answer to all problems, promises to minimize conflict between heritage stakeholders. The practice of community archaeology also intensifies conversations between archaeologists and descendant communities. None of this is to suggest that community archaeology solves all the complicated problems and compromises of archaeology and of interactions with communities with their own local, regional, and national entities. The success of any heritage management program rests on the engagement of many segments of the community.

**Funding:** "Funding for this project was generously provided by the NSF-REU Site: Ifugao Archaeological Project (Award #1460665), the National Geographic Society (NGS-9069), the Hellman Fellowship, UCLA's COR and FCDA Grants, the Institute for Field Research, and the National Museum (Philippines) Grant-in-Aid of Research.

**Acknowledgments:** This paper is the culmination of a decade of dedicated research in Ifugao, with a significant focus on the Old Kiyangan Village, Kiangan, Ifugao, in the latter half of that period. The members of the Ifugao Archaeological Project (IAP) from 2012 to 2016 were instrumental in the acquisition and organization of the data presented herein. Collaborative efforts with the Save the Ifugao Terraces Movement, Archaeological Studies Program at the University of the Philippines, and the National Museum of the Philippines were pivotal in facilitating our fieldwork endeavors. Our gratitude extends to the Butic-Baguilat family for their generosity in allowing us access to the OKV site, despite the disruptions to their agricultural activities. Our acknowledgments would be

incomplete without mentioning the insightful comments and suggestions provided by Iman Nagy, which significantly enriched our this content of this manuscript. 734  
735

**Conflicts of Interest:** “The authors declare no conflicts of interest.” 736

## Appendix A 737

The appendix is an optional section that can contain details and data supplemental to the main text—for example, explanations of experimental details that would disrupt the flow of the main text but nonetheless remain crucial to understanding and reproducing the research shown; figures of replicates for experiments of which representative data is shown in the main text can be added here if brief, or as Supplementary data. Mathematical proofs of results not central to the paper can be added as an appendix. 738  
739  
740  
741  
742  
743

## Appendix B 744

All appendix sections must be cited in the main text. In the appendices, Figures, Tables, etc. should be labeled starting with “A” —e.g., Figure A1, Figure A2, etc. 745  
746

## References 747

1. Barton, R. F. 1919. Ifugao Law. *University of California Publications in American Archaeology and Ethnology* 15:1-186. 748
2. Beyer, H.O. 1955. The Origins and History of the Philippine Rice Terraces. *Proceedings of the Eight Pacific Science Congress*, 1953. National Research Council of the Philippines, Quezon City. 749  
750
3. Acabado, S.B. 2009. A Bayesian Approach to Dating Agricultural Terraces: A Case from the Philippines. *Antiquity* 83: 801-214. 751
4. Acabado, S.B. 2015. Antiquity, Archaeological Processes, and Highland Adaptation: The Ifugao Rice Terraces. Ateneo de Manila University Press, Quezon City. 752  
753
5. Acabado, S.B., J.M. Koller, C-h. Liu, A. Lauer, A. Farahani, G. Barretto-Tesoro, J.A. Martin, and J.A. Peterson. 2019. The Short History of the Ifugao Rice Terraces: A Local Response to the Spanish Conquest. *Journal of Field Archaeology* 44(3): 195–214. 754  
755
6. Acabado, S.B. and M. Martin. 2022. *Indigenous Archaeology in the Philippines: Decolonizing Ifugao History*. Tucson: University of Arizona Press. 756  
757
7. Findley, D.M., S. Acabado, N. Amano, A.U. Kay, R. Hamilton, G. Barretto-Tesoro, G. Bankoff, J. O. Kaplan, and P.R. Roberts. 2022. Land Use Change in a Pericolonial Society: Intensification and Diversification in Ifugao, Philippines Fontana, Lorenza Belinda. 2013. Evo Morales at the Crossroads: Problematizing the Relationship between the State and Indigenous Movements in Bolivia. *Iberoamericana–Nordic Journal of Latin American and Caribbean Studies*, 43(1-2), 19-45. 758  
759  
760  
761
8. Acabado, S.B. 2020. Current Archaeological Practice in Southeast Asia: Collaboration, Engagement, and Community Involvement in Field Research in Southeast Asia. *Journal of Community Archaeology and Heritage*, 7(3), DOI: 10.1080/20518196.2020.1767370 762  
763  
764
9. Cheng C-fu J. 2023. Root Seeking and Remote Sensing with the Bunun in the Mountains of Taiwan. *Advances in Archaeological Practice* 11(3):289-301. doi:10.1017/aap.2023.11 765  
766
10. Heng, P., K. Phon, and S. Heng. 2020. De-exoticizing Cambodia’s archaeology through community engagement, *Journal of Community Archaeology & Heritage*, 7:3, 198-214, DOI: [10.1080/20518196.2020.1767381](https://doi.org/10.1080/20518196.2020.1767381) 767  
768
11. Atalay, S. 2012. *Community-based archaeology: Research with, by, and for indigenous and local communities*. Univ of California Press. 769
12. Colwell-Chanthaphonh, C. 2012. Archaeology and indigenous collaboration. *Archaeological Theory Today*, 267-91. 770
13. Nicholas, G., J. Watkins, and c. Smith. 2014. Indigenous archaeologies in archaeological theory. *American Antiquity*, 12(4), 355-70. 771  
772
14. Acabado, S.B., M. Martin, and F. Datar. 2017. Ifugao Archaeology: Collaborative and Indigenous Archaeology in the Northern Philippines. *Advances in Archaeological Practice* 5(1): 1-11. 773  
774
15. Camacho, L. D., D.t. Gevaña, A.P. Carandang, and Camacho, S. C. 2016. Indigenous Knowledge and Practices for the Sustainable Management of Ifugao Forests in Cordillera, Philippines. *International Journal of Biodiversity Science, Ecosystem Services & Management*, 12(1-2): 5-13. 775  
776  
777
16. Serrano, R. C. and E.A. Cadaweng. 2005. The Ifugao Muyong: Sustaining Water, Culture and Life. In *Search of excellence: exemplary forest management in Asia and the Pacific*, edited by Patrick B. Durst, Chris Brown, Henrylito D. Tacio and Miyuki Ishikawa. Regional Community Forestry Training Center for Asia and the Pacific, Food and Agriculture Organization of the United Nations, Rome, Italy, pp. 103-112. 778  
779  
780  
781
17. Acabado, S.B. 2009. A Bayesian approach to dating agricultural terraces: a case from the Philippines. *Antiquity*, 83(321), 801-814. 782
18. Acabado, S.B. 2010. The Archaeology of the Ifugao Agricultural Terraces: Antiquity and Social Organization. Phd Dissertation, University of Hawaii. 783  
784
19. Acabado, S.B. 2017. The Archaeology of Pericolonialism: Responses of the "Unconquered" to Spanish Conquest and Colonialism in Ifugao, Philippines. *International Journal of Historical Archaeology*, 21: 1-26. 785  
786

20. Acabado, S.B. 2012a. Taro Before Rice Terraces: Implications of Radiocarbon Determinations, Ethnohistoric Reconstructions, and Ethnography in Dating the Ifugao Terraces. In M. Spriggs, D. Addison, and P.J. Matthews (eds), *Irrigated Taro (Colocassia esculenta) in the Indo-Pacific: Biological and Historical Perspectives. Senri Ethnological Studies*. Vol (78), National Museum of Ethnology, Osaka, pp. 285-305. 787-790
21. Acabado, S.B. 2012b. The Ifugao Agricultural Landscapes: Complementary Systems and the Intensification Debate. *Journal Of Southeast Asian Studies* 43(3): 500-522. 791-792
22. Acabado, S.B. and M. Martin. 2020. Decolonizing the Past, Empowering the Future: Community-led Heritage Conservation in Ifugao, Philippines. *Journal of Community Archaeology and Heritage*, 7(3):1-15, DOI: 10.1080/20518196.2020.1767383 793-794
23. Maher, R. 1984. Kiyangan Village of Ifugao Province, Philippines. *Philippine Quarterly of Culture and Society* 12(2): 116-127. 795
24. *Record Historico*. 1911. Del Settlement de Quiangan, Sub-Provincia Ifugao, Provincia Montanosa. Por el Segundo Teniente, M. Meimben, Segun requerido en la Orden Ejecutiva No. 2, Enero 26. 796-797
25. Maher, R. 1973. Archaeological Investigations in Central Ifugao. *Asian Perspectives* 16:1: 39-70. 798
26. Maher, R. F. 1975. The great Ifugao war: A study in archaeology and oral history. *Asian Perspectives*, 18(1), 64-74. 799
27. Conklin, H. 1980. *Ethnographic Atlas of Ifugao*. New Haven: Yale University Press. 800
28. Maher, R. 1985. "Archaeological Investigations in the Burnay District of Southeastern Ifugao, Philippines." *Asian Perspectives* 24: 223-236. 801-802
29. Maher, R. 1989. "Excavations in Bintacan Cave, Ifugao." *Asian Perspectives* 27 (1): 59-70. 803
30. Ledesma, C., N. Amano, and S.B. Acabado. 2015. Faunal remains from the Old Kiyangan Village. *National Museum Journal of Cultural Heritage*, 1(1): 21-30. 804-805
31. Bush, D. 2018. Overview of the Faunal Remains Recovered from the Old Kiyangan Village, Kiangan, Ifugao. *Philippine Quarterly of Culture and Society*, 46(1/2), 70-88. 806-807
32. Lauer, A. and S.B. Acabado. 2015. Infant death and burial practices in late prehistoric Kiyangan Village, Kiangan, Ifugao. *National Museum Journal of Cultural Heritage*, 1(1), 31-37. 808-809
33. Eusebio, M., J. Ceron, S.B. Acabado, and J. Krigbaum. 2015. Rice Pots or Not? Exploring Ancient Ifugao Foodways through Organic Residue Analysis and Palaeobotany. *National Museum Journal of Cultural Heritage*, 1(1): 11-20. 810-811
34. Yakal, M. A. 2017. *Exotic Beads and Jar Burials: Social Status in the Old Kiyangan Village, Ifugao, Philippines*. University of California, Los Angeles. 812-813
35. Lapeña, Q. and S.B. Acabado. 2017. Resistance through rituals: The role of Philippine "native pig" (*Sus scrofa*) in Ifugao feasting and socio-political organization. *Journal of Archaeological Science: Reports* 13: 583-294. 814-815
36. Fishkish, O, J. Ingwersen, M. Lamers, D. Denysenko, and T. Streck. 2010. Phytolith Transport in Soil: A Field Study Using Fluorescent Labelling. *Geoderma* 157(1-2): 27-36. 816-817
37. Madella, M. and C. Lancelloti. 2012. "Taphonomy and Phytoliths: A User Manual." *Quaternary International* 275: 76-83. 818
38. Acabado, S.B. 2018. Zones of refuge: Resisting conquest in the northern Philippine highlands through environmental practice. *Journal of Anthropological Archaeology*, 52, 180-195. 819-820
39. Bodner, C. C. 1986. *On the evolution of agriculture in central Bontoc*. PhD dissertation, University of Missouri-Columbia. 821
40. Alam, Ornob, Rafal M. Gutaker, Cheng-chieh Wu, Karen A. Hicks, Kyle Bocinsky, Cristina Cobo Castillo, Stephen Acabado, et al. 2021. "Genome Analysis Traces Regional Dispersal of Rice in Taiwan and Southeast Asia." *Molecular Biology and Evolution*. <https://doi.org/10.1093/molbev/msab209>. 822-824
41. Greer, S. 2010. Heritage and Empowerment: Community-based Indigenous Cultural Heritage in northern Australia. *International Journal of Heritage Studies* 16:45-58 825-826
42. Prangnell, J., A. Ross, and B. Coghill. 2013. Power Relations and Community Involvement in Landscape-based Cultural heritage Management Practice: An Australian Case Study. *International Journal of Heritage Studies* 16(1-2): 140-155. 827-828
43. Ross, A., J. Prangnell, J. and B. Coghill. 2010. Archaeology, cultural landscapes, and Indigenous knowledge in Australian cultural heritage management legislation and practice. *Heritage Management*, 3(1): 73-96. 829-830
44. Chirikure, S. and G. Pwiti. 2008. Community involvement in archaeology and cultural heritage management: An assessment from case studies in Southern Africa and elsewhere. *Current Anthropology*, 49(3), 467-485. 831-832
45. Moser, S., D. Glazier, J.E. Phillips, L.N. el Nemr, M.S. Mousa, RMN Aeish, S. Richardson, A. Conner, and M Seymour. 2005. Transforming Archaeology Through Practice: Strategies for Collaborative Archaeology and the Community Archaeology Project at Quseir, Egypt." In , *Museums and Source Communities: A Routledge Reader* (1st ed.), edited by A. Brown and A Peers. Routledge. pp. 208-226. 833-836
46. Bens, Jonas. 2020. *The Indigenous Paradox: Rights, Sovereignty, and Culture in the Americas*. University of Pennsylvania Press. 837
47. Phillips, V. 2007. Indigenous Peoples and the Role of the Nation-State. In *Proceedings of the ASIL Annual Meeting* 101:319-323. 838
48. Mylonas, H. and M. Tudor. 2021. Nationalism: What we Know and What we Still Need to Know. *Annual Review of Political Science* 24: 109-132. 839-840
49. Merlan, F. 2009. Indigeneity: Global and Local. *Current anthropology*, 50(3), 303-333. 841
50. Niezen, R. 2000. Recognizing Indigenism: Canadian Unity and the International Movement of Indigenous Peoples. *Comparative Studies in Society and History*, 42(1), 119-148. 842-843
51. Tsunemoto, T. 2019. Overview of the Ainu Policy Promotion Act of 2019. *Foreign Press Center Japan*. Accessed December 20, 2023. 844
52. Sandall, E. 2021. Museum Representations of Contested Spaces: The Kuril Islands. *Slavic Studies Honors Papers* 5. <https://digital-commons.conncoll.edu/slavichp/5> 845-846

- 
53. Fontana, Lorenza Belinda. 2013. Evo Morales at the Crossroads: Problematizing the Relationship between the State and Indigenous Movements in Bolivia. *Iberoamericana–Nordic Journal of Latin American and Caribbean Studies*, 43(1-2), 19-45. 847  
848
54. Allard, Christina. 2022. Sami Land Rights: Recent Developments in Swedish Case Law. *European Yearbook of Minority Issues Online*, 19(1), 221-238. 849  
850
55. Kozak, V. 2022. Food Systems of the Andean Quechua: Countering Industrial Agriculture Through Harmonious Living, Food Sovereignty, and Traditional Knowledge. MS Thesis, Department of Human Geography, Lund University. 851  
852
56. Manaysay, F. V. 2020. Norms from Above, Movements from Below: Climate Change and Global-Local Dynamics of Indigenous Resistance in the Philippines and Indonesia. *JSEHR*, 4, 226. 853  
854

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content. 855  
856  
857