Glocal Praxis in Elementary Education

Journal homepage: journal.unesa.ac.id/index.php/GPrEEc

Slush-and-Burn Cultivation/Shifting Cultivation (*Jhum/Ladang Berpindah*) as an Ethnopedagogical Learning Resource in Grade 5 Social Studies

Chingngaihmuan [1], Neni Mariana[2], Farida Istianah[3], H. Luaisangmuan[4]

[1,2,3]Elementary Education, State University of Surabaya, East Java, Indonesia
[4]Kautilya School of Public Policy, India
*Correspondence: 25010855106@mhs.unesa.ac.id

ARTICLE INFO

Received: 29 January 2025

Revised: 1 August 2025

Accepted: 14 September 2025

Published Online: 12 November 2025

Keywords:

Shifting cultivation, indigenous ecological knowledge, Sustainable Development Goals, contextual learning, ethnopedagogy

ABSTRACT

This study investigates the use of slash-and-burn/shifting cultivation (known as *jhum* in Northeast India and *ladang berpindah* in Indonesia) as contextual ethnopedagogical content in a Grade 5 Social Studies lesson. Grounded in *Kurikulum Merdeka* and the *Profil Pelajar Pancasila*, and aligned with SDGs 1, 2, 3, and 6 as well as Education for Sustainable Development principles, a two-session learning module was implemented with fourteen Grade 5 students in an elementary school in Surabaya. The first session introduced the ecological cycle and cultural context of shifting cultivation through pictures and videos; the second session engaged students in text reading, comprehension questions, vocabulary matching, reflection items, and a short writing task. Using a descriptive qualitative design with rubric-based assessment, data were collected from worksheets, classroom observations, and students' reflective writing. The findings show that most students accurately understood the main stages of shifting cultivation, identified both positive and negative environmental impacts, and articulated values such as cooperation, gratitude, and care for nature. Students were also able to link traditional ecological practices to selected SDGs, indicating the emergence of basic sustainability literacy.

How to cite: Chingngaihmuan, Mariana, N., Istianan, F., Luaisangmuan, H. (2025). Slush-and-Burn Cultivation/Shifting Cultivation (Jhum/Ladang Berpindah) as an Ethnopedagogical Learning Resource in Grade 5 Social Studies. Glocal Praxis in Elementary Education, 2(1), 81-96.

INTRODUCTION

Slash-and-burn cultivation, more commonly referred to as shifting cultivation or *swidden* agriculture, is one of the world's oldest and most widespread smallholder farming systems, practised for thousands of years by Indigenous communities in Asia, Africa, and Latin America (Mertz et al., 2009). As a land-use strategy, shifting cultivation is not a random or destructive practice, but a carefully regulated ecological cycle in which periods of cultivation alternate with extended fallow phases that allow forests and soils to regenerate. Although the specific techniques vary across regions, the core sequence usually includes a series of interconnected stages: (1) site selection and vegetation clearing, (2) drying of cut biomass, (3) controlled burning, (4) planting of mixed crops, (5) harvesting over one or two seasons, and (6) leaving the plot fallow to enable forest regrowth and soil recovery. In Indonesia, this technique is widely known as *ladang berpindah* and is practised by Indigenous communities such as the Dayak of Kalimantan, the Atoni Meto of Nusa Tenggara Timur, and groups in Sulawesi and Papua. In Northeast India, it is commonly known as *jhum* and continues to shape the ecological and cultural life of communities in Mizoram, Nagaland, Manipur, and Meghalaya (Changsan, 2020; Pala, 2022). Against this backdrop, the present study explores how the ecological and cultural dimensions of shifting cultivation can be used as meaningful, context-rich content in a Grade 5 Social Studies lesson.

The practice of shifting cultivation, whether known as *jhum* or *ladang berpindah*, is grounded in generations of ecological knowledge about soils, vegetation, and climate. The cycle begins when a community selects a plot of secondary forest or long-fallowed land, based on criteria such as soil quality, vegetation type, slope, and the length of the previous fallow period (Ramakrishnan, 1992; Pala, 2022). This decision is rarely an individual one; rather, it reflects collective memory and customary rules governing land use. Once a site has been chosen, farmers clear the vegetation by cutting shrubs, undergrowth, and small trees, often leaving larger or commercially valuable trees to facilitate future forest regeneration and maintain structural diversity (Yadav, 2013; INFLIBNET, n.d.). The cut biomass is then left to dry in the sun for several weeks, ensuring an efficient and relatively clean burn. When conditions are optimal, usually in the early dry season, farmers carry out a controlled burn, carefully monitoring the fire to prevent it from spreading beyond the designated area.

This burning phase, often misunderstood in popular discourse, is a critical agroecological step. The ash produced from burnt biomass enriches the topsoil with essential nutrients such as potassium, phosphorus, and calcium, acting as a short-term natural fertiliser that supports crop

growth without synthetic inputs (Tripathi & Pandey, 2019; Gogoi et al., 2020). After the burn, the land is prepared for planting using simple tools like hoes made from iron and bamboo to create small planting holes. This method, known as dibbling, minimises soil disturbance and helps retain moisture, making it suitable for sloping and fragile upland environments (Soni et al., 2020). Rather than cultivating a single crop, farmers typically adopt a polyculture system, sowing a diverse mixture of upland rice, maize, millet, beans, cucumbers, chillies, taro, pumpkins, and other crops in the same field. This diversity enhances ecological resilience by reducing the risk of pest outbreaks, improving soil stability, and providing households with a continuous and varied food supply throughout the year (Soni et al., 2020; Gogoi et al., 2020).

The cultivated plot is usually farmed for one or two seasons before yields begin to decline. At this point, the land is left fallow for an extended period, ranging from eight to twenty years or more, depending on local norms, population pressures, and land availability (Tiwari, 2017; Gogoi et al., 2020). During the fallow phase, native vegetation gradually returns, wildlife habitats re-establish, and soil structure and fertility are restored. Forest regrowth in long fallows contributes to carbon sequestration, canopy closure, and the recovery of microclimates, thereby maintaining broader landscape-level ecological balance. In this way, shifting cultivation forms a dynamic, rotational system that distributes human pressure over space and time while allowing ecological processes to repair and renew the land.

Historically, when customary cycles are respected and fallow periods remain sufficiently long, shifting cultivation has been recognised as a sustainable land-use system (Ramakrishnan, 1992). Rather than permanently clearing forests, Indigenous communities practise a temporal form of cultivation in which intensive use is followed by extended ecological recovery. During these long fallows, soil nutrients are replenished, vegetation cover returns, and biodiversity gradually rebuilds, creating a moving mosaic of cultivated plots and regenerating forest patches (Ramakrishnan, 2007). Under such conditions, shifting cultivation can maintain soil fertility, conserve carbon stocks, and support critical ecosystem processes such as water retention and habitat provision. At the same time, it provides Indigenous communities with food security, diversified livelihoods, and opportunities to maintain cultural traditions that strengthen social identity and support intergenerational knowledge transfer.

However, the sustainability of shifting cultivation is not static; it is highly sensitive to socio-economic and policy changes. When demographic growth, land-use restrictions, logging concessions, or commercial agriculture reduce the length of fallow periods, the ecological balance

of the system is disrupted. Shortened fallows diminish the time available for forests to regrow and soils to recover, leading over time to nutrient depletion, reduced vegetation cover, and weakened ecosystem resilience (Mertz et al., 2009). This can increase soil erosion, surface runoff, and the land's vulnerability to droughts and floods, thereby undermining both food production and environmental stability (Singh, 2020). Younger fallows typically harbour fewer species and store less biomass than older secondary forests, resulting in potential biodiversity loss and reduced carbon sequestration (Tripathi & Pandey, 2019). While burning is central to the system, poorly timed or unmanaged fires, especially under drier climatic conditions, can contribute to temporary air pollution or raise the risk of uncontrolled fire spread (Survival International, n.d.). These negative outcomes are not inherent to shifting cultivation itself; rather, they arise when social and economic pressures disrupt the ecological rhythms and community-based governance mechanisms that historically sustained the system. As a result, shifting cultivation today embodies both ecological resilience and vulnerability, depending on how closely the practice aligns with traditional cycles and land management norms.

Beyond its ecological dimensions, shifting cultivation is deeply woven into cultural identity, social relationships, and moral values. In many Indigenous regions of Indonesia, *ladang berpindah* is intimately connected to ritual life and *adat* traditions. Among Dayak communities, for example, agricultural activities are accompanied by ceremonies that thank ancestral spirits, seek protection, and acknowledge the sacredness of land and forest (Kamakaula & Uria, 2022). These rituals reflect a cosmology in which agriculture is not just an economic activity but a spiritual and ethical practice, aligning with Ramakrishnan's (1992, 2007) broader description of traditional forest knowledge systems in which environmental management is guided by spiritual beliefs and moral obligations. In Northeast India's predominantly Christian states, such as Manipur, Mizoram, Nagaland, and Meghalaya, the ritual character of *jhum* has been reshaped by Christianisation: prayers and blessings before land clearing or planting are now directed to God rather than ancestral spirits, but the collective nature of decision-making and labour remains central (Changsan, 2020; Pala, 2022). Across both contexts, shifting cultivation thus serves as a cultural framework through which communities organise labour, express gratitude, and reaffirm their connection to land.

Cooperation and mutual assistance are key social principles embedded in shifting cultivation systems. In both Indonesia and Northeast India, families and neighbours routinely collaborate at each stage of the *jhum* or *ladang berpindah* cycle from clearing and burning to planting, weeding, and harvesting. This cooperative structure is not merely a pragmatic response

to heavy labour demands; it functions as a cultural mechanism that strengthens trust, reciprocity, and social cohesion. In Indonesia, this ethic resonates with *gotong royong*, a deeply rooted cultural value that emphasises voluntary cooperation and reciprocal help without immediate expectation of reward (Kamakaula & Uria, 2022). Similar systems of reciprocal labour exchange are observed among Indigenous communities practising *jhum* in Northeast India, where collective work parties are essential for managing steep terrain and time-sensitive agricultural tasks (Changsan, 2020; Pala, 2022). As Geertz (1973) suggests, such practices are part of "webs of meaning" that define how people understand themselves, their responsibilities, and their relationships with others. Cooperation in shifting cultivation thus constitutes both a practical strategy for survival and a cultural statement of togetherness, respect, and group identity.

These ecological and cultural characteristics make shifting cultivation a compelling contextual learning resource for elementary Social Studies. It offers a concrete, locally grounded example through which students can explore concepts of human–environment interaction, community life, cultural diversity, and sustainability. *Kurikulum Merdeka* encourages teachers to adopt culturally relevant pedagogy that draws on local knowledge, everyday experiences, and community wisdom to help students better understand social and environmental systems (Kemendikbud, 2022). Using shifting cultivation as a case, teachers can introduce students to real-world practices that link environmental processes with social values such as cooperation, shared responsibility, and respect for nature. These values align closely with the core competencies of the *Profil Pelajar Pancasila*, including *Berakhlak Mulia* (noble character), *Gotong Royong* (collaboration), *Bernalar Kritis* (critical thinking), and *Berkebinekaan Global* (global diversity). In this way, ethnopedagogical content based on Indigenous agricultural systems can simultaneously support cognitive learning, character education, and cultural appreciation.

Shifting cultivation also provides a powerful entry point into Education for Sustainable Development (ESD) and the Sustainable Development Goals (SDGs). Its emphasis on diversified cropping, low external inputs, and forest regeneration resonates with SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 3 (Good Health and Well-Being), and SDG 6 (Clean Water and Sanitation), demonstrating how Indigenous Knowledge Systems contain embedded principles of sustainability (UNESCO, 2020). By relating classroom discussions of *jhum* or *ladang berpindah* to these global frameworks, teachers can help students develop early sustainability literacy and recognise the connections between local practices and global challenges. However, despite this potential, there is still limited classroom-based research in Indonesia that systematically examines how Indigenous

ecological knowledge can be integrated into elementary Social Studies lessons in line with *Kurikulum Merdeka* and *Profil Pelajar Pancasila*. Much of the existing literature on shifting cultivation focuses on ecological impacts, land-use change, or policy debates, with relatively few studies investigating its pedagogical use at the primary school level.

In response to this gap, the present study investigates how shifting cultivation can be used as contextual ethnopedagogical content in a Grade 5 Social Studies lesson in Surabaya. Specifically, the study aims to: (1) describe how Grade 5 students understand the ecological cycle and environmental impacts of *jhum/ladang berpindah* after a structured learning module; (2) explore the cultural values and moral meanings that students identify in the practice, particularly in relation to cooperation, gratitude, and care for nature; and (3) assess the extent to which students are able to connect Indigenous ecological knowledge with selected SDGs and broader sustainability concepts. By analysing students' responses to reading activities, comprehension tasks, reflections, and short writing exercises, the study seeks to demonstrate how Indigenous agricultural knowledge can be transformed into a rich learning resource that supports cognitive, affective, and value-based development in elementary education.

METHODS

To investigate how Grade 5 students developed an awareness of shifting cultivation within a contextualised Social Studies lesson, this study employed a descriptive qualitative research approach. Descriptive qualitative designs are particularly appropriate for capturing naturally occurring classroom processes without manipulating instructional conditions or attempting to establish causal relationships. Here, the design made it possible to document learner behaviour as it unfolded in real time, record the dynamics of classroom interaction, and analyse student-produced work in close connection with the instructional sequence. This approach also allowed the researcher to examine students' cognitive understanding of ecological concepts, their emotional and moral responses to cultural values, and their emerging sustainability-oriented thinking in an integrated way. Attention was given to the complexity of students' written and verbal expressions so that interpretations could consider how learners connected new information about shifting cultivation with prior experiences, school learning, and local cultural practices. During the interpretative stage, Braun and Clarke's (2006) thematic analysis framework was used as a flexible yet rigorous procedure for identifying, organising, and interpreting recurrent patterns of meaning within the qualitative data. This combination of descriptive qualitative design and thematic analysis

enabled the study to move beyond surface-level description and to explore how ethnopedagogical content supports meaningful learning among elementary students.

The participants in this study were 14 Grade 5 students from one of the Elementary School in Surabaya. The class constituted an intact group with varied academic abilities, literacy levels, and socio-cultural backgrounds, reflecting the heterogeneity typical of urban public elementary schools. The learning intervention consisted of two 90-minute Social Studies sessions designed in alignment with the national curriculum. Instructional activities were organised according to *Kurikulum Merdeka* principles, which emphasise student-centred learning, contextual relevance, and exploration of cultural and environmental themes (Kemendikbud, 2022). In the first session, students were introduced to shifting cultivation (*jhum/ladang berpindah*) through a teacher-led PowerPoint presentation that combined photographs, diagrams, and short video clips. These visual materials depicted the ecological stages of shifting cultivation, its landscape context, and the daily activities of farmers, providing concrete imagery to anchor subsequent discussion. In the second session, students engaged with a reading text developed by the teacher that described the ecological cycle, cultural significance, and sustainability implications of shifting cultivation in age-appropriate language. The content of the text was adapted and simplified from peer-reviewed environmental science and ethnographic literature (Yadav, 2013; Soni et al., 2020; Kamakaula & Uria, 2022), ensuring that the material was both accessible to Grade 5 readers and faithful to the underlying scientific and cultural knowledge. Throughout the intervention, the classroom teacher delivered the lessons, while the researcher maintained a non-intrusive, non-participant observer role so as not to disrupt normal classroom dynamics. Permission for the study was obtained from the school administration, and all student work was anonymised in the analysis to protect participants' identities.

Following the shared reading activity in the second session, students completed an individual worksheet consisting of six task components designed to assess different aspects of learning:

1. **Comprehension questions** assessed factual understanding and recall of key ideas from the text (e.g., stages of shifting cultivation, tools used, and the role of fallow periods).
2. **Vocabulary matching** evaluated recognition of core ecological and cultural terms and their corresponding meanings.

3. **Values and reflection items** invited students to express their moral reasoning, cultural understanding, and environmental awareness, for instance, by explaining why cooperation is important or how people should treat forests.
4. **True/false statements** tested basic conceptual distinctions and helped to identify and correct potential misconceptions (e.g., whether shifting cultivation always destroys forests).
5. **Fill-in-the-blank items** examined students' ability to integrate and apply concepts in contextually meaningful sentences.
6. **A short writing task** asked students to summarise what they had learned and to express their personal views about shifting cultivation, thus probing written expressiveness, synthesis of ideas, and early critical thinking.

All worksheet components were evaluated using a teacher-developed rubric that classified student performance into four categories: Excellent, Good, Fair, and Needs Support. The rubric included descriptors for conceptual accuracy, clarity of explanation, depth of reflection, and ability to relate shifting cultivation to environmental and social values. It therefore served not only as a scoring device but also as an analytic tool for identifying patterns in students' understanding across the six task types. Combining categorical ratings with qualitative descriptors yielded a richer picture of students' learning than numerical scores alone, helping to highlight both strengths and areas where additional instructional support might be needed. By capturing the breadth of students' conceptual grasp and the quality of their reflective thinking, this mixed form of data (qualitative responses interpreted alongside descriptive scoring) enhanced the credibility and interpretive depth of the findings.

Three complementary sources of data were used to construct the dataset. First, the completed student worksheets provided the primary evidence for analysing knowledge acquisition, value orientations, and sustainability-related thinking. These written responses were examined for accuracy, completeness, level of detail, and the ways in which students articulated ecological and cultural concepts. Second, rubric scores from each of the six worksheet components generated descriptive quantitative information summarising overall performance patterns across the class. Although these scores were not subjected to inferential statistical analysis, they enabled systematic comparison of student achievement in different task domains (e.g., comprehension versus writing), thereby supporting and contextualising the qualitative interpretations. Third, non-participant classroom observations were conducted during both sessions to document student engagement, peer interaction, and collaborative behaviours, drawing on sociocultural perspectives that

emphasise the role of social interaction in meaning-making (Vygotsky, 1978). Observation notes captured how students responded to visual materials, asked questions, worked on the reading text, and approached the worksheet tasks, providing contextual information that helped interpret the written data and reducing the risk of over-reliance on a single data source.

Data analysis followed Braun and Clarke's (2006) six-phase thematic analysis procedure. In the first phase, the researcher familiarised herself with the data through repeated reading of worksheets and observation notes, noting initial impressions about students' ecological understanding, value statements, and references to sustainability. In the second phase, initial codes were generated to label salient features of the data, such as correct identification of cultivation stages, recognition of positive or negative environmental impacts, references to cooperation or gratitude, and links made to SDGs or future environmental actions. In the third and fourth phases, these codes were collated into potential themes and then reviewed and refined to ensure that each theme was coherent internally and distinct from other themes. Examples of emergent themes included "understanding of ecological cycles," "values of cooperation and responsibility," and "emerging sustainability literacy." In the fifth phase, themes were clearly defined and named in relation to the research aims, and representative data excerpts were identified to illustrate each theme. Finally, in the sixth phase, the thematic findings were integrated with descriptive rubric data to construct a comprehensive narrative of student learning outcomes. Throughout the process, the researcher sought to maintain a close connection between the raw data, the coded segments, and the interpretive claims by revisiting the dataset, comparing competing interpretations, and checking for disconfirming evidence. This emphasis on triangulation across data sources and analytic transparency strengthened the trustworthiness of the analysis. Taken together, the methodological approach enabled a detailed examination of how Grade 5 students engaged with shifting cultivation as contextual Social Studies content, and how they developed ecological understanding, cultural appreciation, and value-based perspectives through the learning intervention.

RESULTS AND DISCUSSION

The findings of this study show that integrating shifting cultivation (*jhum/ladang berpindah*) into Grade 5 Social Studies meaningfully enhanced students' cognitive, affective, and value-oriented learning. Students' understanding of the topic was assessed through six task components: Question & Answer, matching, reflection, true/false, fill-in-the-blanks, and writing for a total possible score of 24 points. Table 1 summarises the performance of all fourteen students, showing

noticeable variation across components and overall scores. This distribution reflects the diverse abilities typical of primary classrooms while also demonstrating that most students benefited strongly from the intervention.

Table 1. Student Assessment Scores and Grade Classification

Student	Q&A (4)	Match (4)	Reflection (4)	T/F (4)	Fill Blanks (4)	Writing (4)	Total (24)	Grade
Student 1	3	3	4	3	3	4	20	B
Student 2	3	2	3	2	2	3	15	C
Student 3	4	4	4	3	3	3	21	B
Student 4	3	2	2	3	3	1	14	D
Student 5	2	4	4	3	3	2	18	C
Student 6	2	4	2	2	3	1	14	D
Student 7	2	4	2	3	3	2	16	C
Student 8	3	4	4	4	4	4	23	A
Student 9	4	4	4	4	4	4	24	A
Student 10	3	3	4	4	3	4	21	B
Student 11	3	2	4	3	3	2	17	C
Student 12	4	4	4	3	3	4	22	A
Student 13	4	2	4	3	4	3	20	B
Student 14	1	1	1	2	1	1	7	D

Overall, student scores ranged from 7 to 24. Based on the grading criteria, three students obtained Grade A (22–24 points), four earned Grade B (19–21), four received Grade C (15–18), and three were classified as Grade D (6–14). Table 2 provides an overview of the distribution. Notably, 11 out of 14 students achieved at least a Grade C, suggesting satisfactory to excellent mastery of the concepts. Table 2 visually displays the distribution of grades, illustrating the overall positive learning trend following the intervention.

Table 2. Score Ranges, Grade Categories, Mastery Descriptions, and Student Count

Total Score	Grade	Meaning	No. of Students
22–24	A	Excellent mastery	3
19–21	B	Good mastery	4
15–18	C	Fair / needs some support	4
6–14	D	Needs significant support	3

Analysis of worksheet components reveals consistent cognitive strengths in matching, true/false, and reflection tasks. Students demonstrated strong recall and conceptual understanding of key ecological ideas. Many identified all four main stages of shifting cultivation: vegetation clearing, controlled burning, mixed-crop planting, and fallow regeneration with explanations closely aligned to the scientific literature.

A representative student wrote: *"We burn only the dry parts, so the soil gets new food. The ash helps the plants grow again."* This statement reflects early comprehension of nutrient cycles and mirrors ecological findings on ash deposition as a natural fertiliser (Tripathi & Pandey, 2019; Gogoi et al., 2020). Another student explained the importance of controlled burning: *"If the fire is too big, the forest will not come back fast."* Such comments indicate emergent systems thinking and an ability to perceive how human actions influence ecological regeneration.

Performance was lower in the writing sections, where some students struggled to express ideas in complete sentences or synthesise concepts. This aligns with Piaget's (1972) stage theory: while Grade 5 students can grasp concrete ecological sequences, extended written articulation remains developing. Still, the overall cognitive outcomes show that contextualised instruction enabled students to accurately understand complex ecological processes.

Figure 1. Ecological Cycle of Shifting Cultivation (Jhum/Ladang Berpindah)

The qualitative data showed deep engagement with the cultural values embedded in shifting cultivation. Students frequently emphasised cooperation, mutual aid, responsibility, and respect for nature values widely observed in ethnographic studies of Indigenous agricultural systems (Ramakrishnan, 2007; Kamakaula & Uria, 2022).

One student wrote: “We have to help each other so the work is fast and no one gets tired alone.” This reflects the ethos of *gotong royong*, reinforcing the social cohesion essential in shifting agriculture and consistent with Indonesian cultural values. Another student noted: “We must say thank you to the forest because it gives us food.”

Such reflections indicate early moral reasoning and environmental empathy, aligning with *Profil Pelajar Pancasila* domains such as *Berakhlak Mulia*, *Gotong Royong*, and *Bernalar Kritis*. These findings demonstrate that culturally grounded material not only enhances comprehension but also strengthens character education.

A notable achievement was students’ ability to connect traditional ecological knowledge to the Sustainable Development Goals. During discussions, learners linked mixed-crop planting to SDG 2 (*Zero Hunger*), pesticide-free farming to SDG 3 (*Good Health and Well-Being*), and fallow-period forest regeneration to SDG 6 (*Clean Water and Sanitation*).

One student insightfully wrote: *“If the forest grows back, the river stays clean, and we have water.”* Such comments are evidence of systems thinking, showing how students relate local ecological processes to global sustainability frameworks. UNESCO (2020) emphasises that ESD

becomes most effective when rooted in local contexts; this study demonstrates that primary students can indeed grasp SDGs when presented through culturally meaningful practices.

Across quantitative scores and qualitative reflections, a clear pattern emerges: cognitive understanding, cultural appreciation, and sustainability awareness reinforced one another. Students who demonstrated strong ecological comprehension also tended to articulate cultural values more clearly and make more sophisticated SDG connections.

This supports Dewey's (1938) argument that meaningful learning arises from the interplay of experience, reflection, and cultural relevance, and aligns with Kolb's (1984) experiential learning cycle. The collaborative activities further confirm Vygotsky's (1978) sociocultural perspective, where peer interactions enable deeper meaning making.

The thematic analysis (Braun & Clarke, 2006) revealed three dominant cross-cutting themes:

1. **Ecological reasoning grounded in cyclical environmental processes**
2. **Cultural-moral values emphasizing cooperation and responsibility**
3. **Emerging sustainability literacy with SDG-linked insights**

These converging themes show that ethnopedagogical learning is inherently multidimensional, producing integrated learning gains rather than isolated outcomes.

While the findings are compelling, they reflect a single classroom context with a small sample size. Thus, the results are not intended to be generalized universally. However, the patterns observed offer strong indications of the pedagogical value of contextualized Indigenous ecological knowledge in Social Studies.

Overall, the intervention demonstrated that shifting cultivation is a highly effective contextual learning vehicle: it makes ecological concepts accessible, bridges cultural values with modern educational goals, and introduces sustainability literacy through real world, culturally resonant examples. The success of this approach underscores the potential for ethnopedagogical content to enrich *Kurikulum Merdeka* and the *Profil Pelajar Pancasila*, while aligning classroom learning with global ESD frameworks.

CONCLUSION

The implementation of shifting cultivation as a contextual learning resource in Grade 5 Social Studies proved to be highly effective in fostering students' cognitive, affective, and value-based development. Through a combination of visual presentations, guided reading, discussion, and

rubric-assessed worksheet tasks, students developed a clear understanding of the main ecological processes underpinning *jhum/ladang berpindah*, including vegetation clearing, controlled burning, mixed-crop planting, and fallow regeneration. Their ability to describe ecological benefits such as temporary soil enrichment, support for biodiversity, and the role of fallows in restoring forest cover alongside potential risks associated with shortened cycles, erosion, and declining forest recovery indicates that upper elementary students are capable of engaging meaningfully with complex environmental systems when these are presented in structured, age-appropriate ways. The close alignment between students' explanations and ecological analyses found in the literature suggests that the learning module successfully translated scientific knowledge into forms accessible to young learners.

Beyond ecological concepts, the intervention significantly strengthened pupils' moral and cultural awareness. Students consistently identified values embedded in shifting cultivation, including cooperation, mutual assistance, gratitude, and respect for natural resources. Their written reflections and responses to value-oriented items demonstrated that they were not merely recalling information, but actively engaging with the ethical and social dimensions of Indigenous agricultural practice. These outcomes align closely with the core dimensions of the *Profil Pelajar Pancasila*, particularly *Gotong Royong*, *Berakhlak Mulia*, and *Bernalar Kritis*, showing that culturally grounded content can support character formation, social sensitivity, and critical reflection. In this sense, Indigenous Knowledge Systems emerge not only as reservoirs of ecological wisdom but also as powerful platforms for nurturing civic responsibility and ethical orientation within contemporary classrooms.

A further key finding of this study is the extent to which students were able to connect traditional ecological knowledge to global sustainability frameworks. Many pupils were able to explain how shifting cultivation can contribute to SDG 1 (No Poverty) through household-level food security, SDG 2 (Zero Hunger) through diversified cropping systems, SDG 3 (Good Health and Well-Being) through reduced reliance on chemical inputs, and SDG 6 (Clean Water and Sanitation) through forest regeneration that protects watersheds and soil stability. These linkages reflect emerging systems thinking: students began to see how local practices relate to broader environmental and social goals. Such outcomes resonate with Education for Sustainable Development, which emphasises the importance of integrating global concerns with learners' lived realities. The findings indicate that even at the elementary level, students can engage with the

SDGs in a concrete and meaningful way when these are anchored in familiar or vividly presented cultural-environmental contexts.

Taken together, the results highlight the pedagogical significance of integrating Indigenous ecological knowledge into primary Social Studies. Using shifting cultivation as an ethnopedagogical lens made learning more relevant, culturally resonant, and intellectually stimulating. The topic offered a concrete illustration of how long-standing practices embody sophisticated understandings of ecosystem dynamics and sustainable land management, while also carrying cultural meanings and social values that are still pertinent today. This approach did not simply inform students about environmental processes; it also fostered cultural appreciation, moral sensitivity, and early sustainability awareness. In doing so, it supported the aims of *Kurikulum Merdeka* and the *Profil Pelajar Pancasila*, and contributed to broader efforts to align schooling with sustainability-oriented education.

At the same time, this study has limitations that should be acknowledged. The research was conducted with a small, single-class sample in one elementary school and focused on a short, two-session intervention. The findings, therefore, cannot be generalised to all contexts and should be interpreted as exploratory rather than definitive. Future research could extend this work by implementing similar modules based on other Indigenous ecological traditions in Indonesia, such as *sasi* in Maluku, *subak* in Bali, or *uma* in Mentawai, to examine how different knowledge systems shape students' understandings of environment and culture. Longitudinal studies could also investigate whether repeated exposure to ethnopedagogical content leads to sustained changes in students' environmental attitudes, everyday practices, and appreciation of cultural diversity. As schools increasingly seek to realise sustainability-oriented learning goals, the systematic inclusion of traditional ecological knowledge in the curriculum offers a promising pathway for deepening academic learning while simultaneously advancing character development and ecological citizenship.

REFERENCES

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Changsan, I. (2020). Shifting cultivation in North-East India. *International Journal of Engineering Development and Research, 8*(1), 385–387.

Dewey, J. (1938). *Experience and education*. Macmillan.

Geertz, C. (1973). *The interpretation of cultures*. Basic Books.

Gogoi, A., Sahoo, U. K., & Saikia, H. (2020). Vegetation and ecosystem carbon recovery

following shifting cultivation in the Mizoram–Manipur–Kachin rainforest ecoregion, Southern Asia. *Ecological Processes, 9*, Article 21. https://doi.org/10.1186/s13717-020-00225-w

INFLIBNET. (n.d.). *Shifting cultivation: Ecological anthropology*. https://ebooks.inflibnet.ac.in/antp11/chapter/shifting-cultivation/

Kamakaula, Y., & Uria, D. (2022). Sistem pertanian ladang berpindah dalam perspektif etnoekologi. *Hidroponik: Jurnal Ilmu Pertanian dan Teknologi Tanaman, 2*(1), 1–10. https://journal.asritani.or.id/index.php/Hidroponik/article/view/310

Kemendikbud. (2022). *Kurikulum Merdeka: Pedoman implementasi Profil Pelajar Pancasila*. Kementerian Pendidikan, Kebudayaan, Riset, dan Teknologi Republik Indonesia.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development*. Prentice Hall.

Leopold, A. (1949). *A Sand County almanac*. Oxford University Press.

Mertz, O., Padoch, C., Fox, J., Cramb, R. A., Leisz, S. J., Lam, N. T., & Vien, T. D. (2009). Swidden change in Southeast Asia: Understanding causes and consequences. *Human Ecology, 37*(3), 259–264. https://doi.org/10.1007/s10745-009-9245-2

Pala, S. (2022). Shifting cultivation and sustainable livelihoods in Northeast India: An assessment of community-based approaches. *Journal of Rural Studies, 92*, 172–180. https://doi.org/10.1016/j.jrurstud.2022.06.014

Piaget, J. (1972). *The psychology of the child*. Basic Books.

Ramakrishnan, P. S. (1992). *Shifting agriculture and sustainable development*. UNESCO–MAB Series.

Ramakrishnan, P. S. (2007). Traditional forest knowledge and sustainable forestry: A North-East India perspective. *Forest Ecology and Management, 249*(1–2), 91–99. https://doi.org/10.1016/j.foreco.2007.05.020

Singh, K. (2020). Revisiting shifting cultivation in Northeast India: Challenges and opportunities for sustainable land management. *Environmental Management Review, 22*(3), 45–57.

Soni, J. K., Hota, S., & Shakuntala, I. (2020). Jhum cultivation: The way of livelihood security for Mizoram. *Indian Farming, 69*(9), 44–47. https://epubs.icar.org.in/index.php/IndFarm/article/view/96914

Sterling, S. (2014). *Sustainable education: Re-visioning learning and change*. Green Books.

Survival International. (n.d.). *Swidden and conservation*. https://www.survivalinternational.org/about/swidden

Tiwari, B. K. (2017). Shifting cultivation and biodiversity conservation in Northeast India: Tradition and transition. *Indian Journal of Traditional Knowledge, 16*(1), 37–46.

Tripathi, R. S., & Pandey, H. N. (2019). Impact of shifting cultivation on soil and vegetation in Northeast India. *Environmental Monitoring and Assessment, 191*(6), Article 359. https://doi.org/10.1007/s10661-019-7464-7

UNESCO. (2020). *Education for Sustainable Development: A roadmap*. UNESCO Publishing.

Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Harvard University Press.

Yadav, P. K. (2013). Slash-and-burn agriculture in North-East India. *Expert Opinion on Environmental Biology, 2*(1). https://doi.org/10.4172/2325-9655.1000102