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ETHNOMATHEMATICS IN THE CULTURE OF MOUNTAIN RICE FARMING OF THE DAYAK KANAYATN COMMUNITY

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ABSTRACT

Rice is the staple food for people in West Kalimantan. One of the regions with rice farming culture is the Tunang village in Mempawah Hulu sub-district, Landak district, West Kalimantan, which is influenced by the habits of the population and geographical location. There are a series of processes for growing rice in the village that are inseparable from culture and can be linked to mathematics (ethnomathematics). The objective of this study is to identify the ethnomathematics of the cultivation of mountain rice or moton rice in the Dayak Kanayatn tribe, especially the Dayak Ahe tribe. This study uses a qualitative approach with a descriptive method. Data collection techniques include literature studies, surveys, and interviews. The results show that rice farming activities in the Dayak Ahe community include clearing the land (*nabas uma*), cutting down trees (*nabang*), burning the field (*nunu uma*), cleaning the field after the burning (*marasehan uma*), sowing (*nugal uma*), weeding (*ngarumput uma*), and harvesting the rice (*bahanyi*). These processes are accompanied with a series of ritual ceremonies, namely *nabo' panyugu nagari*, *nabo' panyugu tahutn/naik dango*, *ngawah*, *batanam padi* (which consists of *ngalabuhatn*, *ngamalo lubakng tugal*, and *ngiliratn panyakit padi*), *ngaladakng buntikng padi*, *ngabati'*, and *ngaleko*. There are ethnomathematics values contained in the ceremonies, namely points and lines, three-dimensional figures, two-dimensional shapes, counting, and symmetry of shape.

Keywords: Dayak Kanayatn, ethnomathematics, mountain rice

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INTRODUCTION

Rice is a staple food for people in West Kalimantan. Rice farming activities can be found in the village of Tunang, Mempawah Hulu district, Landak regency, West Kalimantan, which is influenced by the habits of the population and geographical location (Farukhi & Afrida, 2008). One of the indigenous tribes living in Kalimantan is the Dayak tribe. The Dayak tribe on the island of Borneo consists of various sub-tribes and has a great history. In general, Western anthropologists refer to non-Muslim natives of Kalimantan as 'Dayak' (Klinken, 2006). The Dayak people mainly live in remote areas (Wallace, 2015). They are the natives of the Kalimantan Island and inhabit most of the island's regions (Ahyat, 2016). The people known as Dayak in fact consist of various groups, such as Maanyan, Ngaju, Iban, Ot Danum, Meratus, etc. In spite of the many similarities among their cultures, each group actually has a different language and generally are not familiar with each other's language. The Dayak tribe group is divided into nearly 405 sub-tribes. Each sub-tribe has nearly similar customs and culture, especially in language (Lontaan, 1975).

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Nowadays, only a few of the Dayak communities are nomadent and live as hunters and gatherers, as most of them rely on shifting cultivation to meet their needs (Schiller, 2007). Shifting cultivation has been passed down across generations and has a good impact on nature. In shifting cultivation, the main crop is typically mountain rice in addition to other crops (Sellato, 1994). Mountain rice, or also known as moton rice by the Dayak Kanayatn people, is upland rice that grows depending on the season and can live on on rain-fed land, especially in the region of Landak regency, West Kalimantan, more specificially the Tunang village in the Mempawah Hulu district. This type of rice is still preferred by the Dayak Kanayatn people in Tunang village due to its soft texture. Moreover, the decision to grow mountain rice in the village is also influenced by the morphological condition of the area which is in the form of a plateau. As explained in the book "Getting to Know the 33 Provinces of Indonesia: West Kalimantan" the region of West Kalimantan bordering East Malaysia is a landscape in the form of highlands, hills, and mountains (Farukhi & Afrida, 2008).

The process of cultivating mountain rice is influenced by the available natural resources, soil fertility, cultivation techniques, and the work system. In addition, it is also influenced by the customs and culture of the Kanayatn Dayak tribe. The Kanayatn Dayak people always follow and adhere to the teachings of their ancestors which are passed down orally across generations (Priskila, 2010). According to the belief of the ancestors of the Dayak Kanayatn tribe, every object has a spirit. Both humans and animals have supernatural powers. Everything that is done by the Dayak Kanayatn community must be in accordance with the manners and cultural customs that have been taught by their ancestors, including the culture of farming and rice cultivation.

METHOD

The type of research of this study is qualitative with a descriptive method. Data collection techniques include literature studies, surveys, and interviews. The sources of data in this study were farmers in the village of Tunang of Mempawah Hulu district, Landak regency, West Kalimantan province, namely Mr. Ignasius Aciap and Mrs. Ropina. Mr. Ignasius Aciap is a tribe member who serves as a panyangahatn (a spiritual leader that is proficient in the Dayak Ahe language) that can perform the nyangahatn uma procession for the field ceremony. This study results in qualitative data to describe ethnomathematics in the culture of the Dayak Kanayatn tribe, especially the Ahe Dayak sub-tribe, in the mountain rice or moton rice farming process in the village of Tunang.

RESULTS AND DISCUSSION

Rice Farming in the Dayak Ahe Tradition

The Dayak tribe is one of the tribes whose majority of the population works as farmers. This is because the farming culture itself has existed since the ancient times. The Dayak Kanayatn tribe community in the village of Tunang knows several stages in the rice farming process, especially mountain rice. According to Mr. Igansius Aciap and Mrs. Ropina, the process can be described as follows: (1) clearing the land (*nabas uma*), (2) cutting down trees (*nabang*), (3) burning the field (*nunu uma*), (4) cleaning the field after the burning (*marasehan uma*), (5) sowing (*nugal uma*), (6) weeding (*ngarumput uma*), and (7) harvesting the rice (*bahanyi*).

In addition to land cultivation and rice farming, the Ahe Dayak people in the village of Tunang also believe in the existence of God, known among the Dayak people as Jubata. The existence of Jubata is incredibly instrumental as the Dayak community prays in various ceremonies to the Jubata before conducting every activity, including before starting the rice farming process. The Dayak Ahe people in Tunang village performs the sembayang uma field ceremony as a way to ask for a blessing and permission to God for the farming process in the field. Another ceremony called naik dango is also performed to express their gratitude during the harvesting season or the new rice year.

In a traditional ceremony, the Dayak Kanayatn tribe recites some mantras. A traditional ceremony in the Dayak Ahe language is known as Nyangahatn (Djuweng, 2003). Nyangahatn is done by a traditional ceremony leader or Panyangahatn who understands the customs. Not everyone can become a Panyangahatn. The use of mantras on the Kanayatn Dayak tribe is adjusted to the traditional ceremonies that are carried out. Each traditional ceremony has a different mantra. Mantras are oral poetry which contain potential mystical powers or prayers and use the local

language (Dayak Kanayatn) based on the beliefs that are passed down from the ancestors. In order for these mantras to work, it is not enough to merely memorize them, as they must also be accompanied by mystical practices (Saputra, 2007).

Stages of Farming

Clearing the land (nabas uma)

Nabas uma is typically carried out collectively to clear the land from shrubs and bushes in the months of May to June. However, although it can be done in other months as well, nabas is often done together as the villagers want to avoid missing the field burning by themselves. The Dayak Ahe people di Tunang believe that they should not be left behind by other farmers when burning the fields (*nunu uma*).

Cutting down the trees (nabang)

Cutting down the trees on the land to be used for farming is the following stage after nabas and takes a considerable amount of time. Generally, the Dayak community carries out this activity using a Mandau or machete.

Field burning (nunu uma)

Field burning is essentially aimed to burn the cut down trees and the weeds and shrubs. Burning the field is also beneficial to enhance soil fertility. A picture of a burnt field can be seen in Figure 1.

Figure 1. Burnt Field

Cleaning the field after burning (marasehan uma)

After burning the field, the remains of the trees that are not fully burnt to ashes will be removed and the field is further cleaned to make the sowing process easier. For fields that are cleared in May to June, the burning will be done in July to August.

Sowing (nugal uma)

Sowing is the activity of dispersing the seeds into small holes in the soil using a dibber staff on the burnt field. Three to five seeds are dispersed for each hole along with cucumber seeds (Dayak cucumber). The men will make small holes on the ground by piercing the soil with the dibber and leave 1 inch or 20 centimeters of space between the holes. Meanwhile, it is the women's job to disperse the rice plant seeds in the sowing holes.

Weeding (ngarumput uma)

Weeding is done in two to three weeks after the rice plant seeds are sown. When the field burning is done appropriately, weeding only takes up to two times until the crops are harvested.

Harvesting the rice (bahanyi)

About a month after the grains are formed, the rice plants will turn yellow and be ready for harvesting. The harvest season is about six months after the seeds are sown. The harvesting

process is typically done communally with other families and community members. When one of the village families harvests their field, the neighbors will help with the harvesting process. This is known as balale'. Rice is harvested about 5 cm above the root by hand using a tool called pangatem/katam or a sickle.

Farming Rituals

The traditional ceremonies related to farming are as follows: (1) *nabo' panyugu nagari*, (2) *nabo' panyugu tahutn/naik dango*, (3) *ngawah*, (4) *batanam padi* (consisting of *ngalabuhatn*, *ngamalo lubakng tugal*, and *ngiliratn panyakit padi*) (5) *ngaladakng buntikng padi*, (6) *ngabati'*, and (7) *ngaleko*. The traditional Dayak Ahe ceremony is performed by reciting a mantra. This is known as Nyangahatn and performed by Panyangahatn. The people of Dayak Ahe in Tunang village still carry out two traditional ceremonies, namely *batanam padi* and *nabo' panyugu tahutn/naik dango*, as described below.

The batanam padi ceremony

The *batanam padi* ceremony or field ceremony aims to ask for a blessing to God or Jubata to cultivate the land. The mantra is recited in the traditional Ahe language. Therefore, the panyangahatn must be fluent in the Dayak Ahe language. The mantra contains prayers and requests to Jubata. The batanam padi mantra is monotonously recited with a slight occurrence of high and long notes. The mantra recitation is as follows:

> *Asa'---, Dua---, Talu, Ampat, Lima, Anam, Tujuh. Asa', Dua, Talu, Ampat, Lima, Anam, Tujuh. Asa', Dua, Talu, Ampat, Lima, Anam, Tujuh. Bajalatn Bujakng Pabarasa nang tuju...h biti'*. Bagago'atnna'. Baalappatnna'. Ke' kita' tidur bagunakatn. Ke' makatn ame kanyang agi'. Ja kita' Pama. Kita' Jubata. Kita Nang jajia'*.... PATONE, Pajarupm , Pasa', rinyuakng agi'. Ja kita' Jubata. Kita' Urakng Tuha.*

Below is the translation of the mantra of the *batanam padi* ceremony in English:

> *One, Two, Three, Four, Five, Six, Seven. One, Two, Three, Four, Five, Six, Seven. One, Two, Three, Four, Five, Six, Seven. Walk the seven seeds of Bujakng Pabarasa. Search. Look. Wake each other up when you fall asleep. Don't get too full when you eat. O God. Those of you who want to be. The Medium to the Jubata. O God.*

The mantra of the *batanam padi* ceremony contains the mathematics concept of counting as evident in the first verse "*Asa', Dua, Talu, Ampat, Lima, Anam, Tujuh*" which translates to "One, Two, Three, Four, Five, Six, Seven." The last number in the counting order is always seven, because it represents the highest numerical value which means completeness. The fact that the traditional ceremony ends in an odd number means openness, whereas an even number means closing or ending. Mathew (2012) explains that even numbers are also viewed as masculine, divine, perfect, and worthy of the gods. The *batanam padi* ceremonial process can be seen in Figure 2.

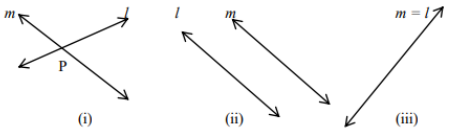
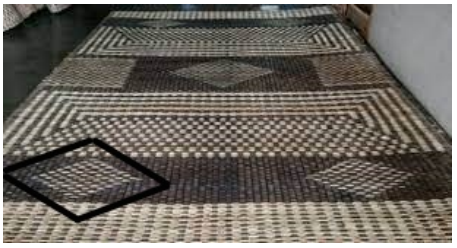
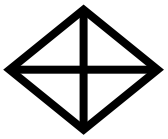
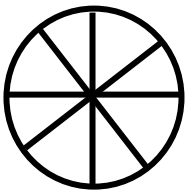
Figure 2. *Batanam Padi* Ceremony

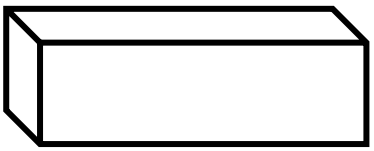
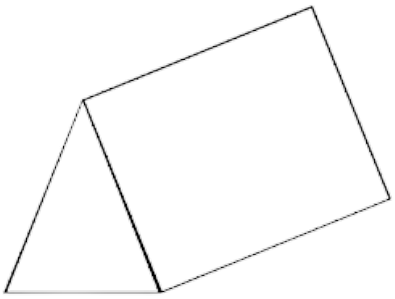
Ethnomathematics in the Mountain Rice Farming of the Dayak Ahe Tribe

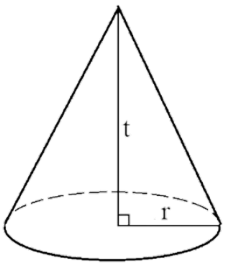
The following are ethnomathematics identified in the mountain rice farming process of the Dayak Ahe tribe: (1) The relationship between points and lines in patterns formed by the planting holes; (2) Angles formed by the bamboo tray on which chicken is placed as an offering in *batanam padi*; (3) Angles in the folded layang leaf to store rice as an offering in *batanam padi*; (4) Bamboo tube for placing the offerings; (5) The circles in bamboo tray and plates for offerings, the dibber staff and tarinak; (6) Counting in the *batanam padi* mantra; (7) Measuring the space between the planting holes; (8) Cone of the *tugalan*, *tarinak*, and bamboo tray for placing the offerings; (9) The symmetry in the bamboo tray for placing offerings and in the bide traditional mat for sitting; (10) Estimation of the number of seeds (three to five seeds) for sowing; (11) The cuboid shape on dango; (12) The triangle shape on dango; (13) The triangular prism shape on the dango roof; (14) The rectangle shape on dango; and (15) Two-dimensional shapes on the bide mat. Rice farming activities which contain mathematics values are presented in Table 1.

Table 1. Ethnomathematics in Mountain Rice Farming

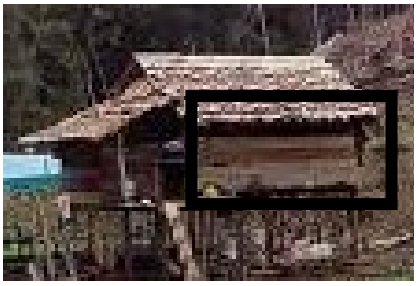
No.	Mathematical Concept	Matemathics Identified	Activity/ Object
1	Counting	In the rice farming process, one of the rituals aimed to ask for a blessing and express gratitude to God (*Jubata*) is known as *nyangahatn* by the Dayak people. The ritual involves reciting a mantra which contains counting (as seen in section C. Farming Rituals), namely: *"Asa', Dua, Talu, Ampat, Lima, Anam, Tujuh"* which translates to "One, Two, Three, Four, Five, Six, Seven."	*Batanam padi* and *naik dango*
2	Relationship between Points and Lines	The planting holes appear like dots that connect and form lines. This represents the mathematical concept of points and lines in geometry. The dots from the sowing holes form three possible relationships of two lines (pictured), namely: (i) intersecting, (ii) parallel, or (iii) overlapping.	

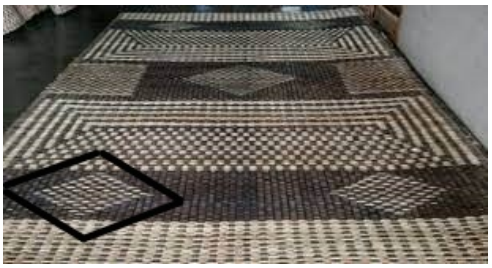
No.	Mathematical Concept	Matemathics Identified	Activity/ Object
			 The planting holes form points and lines.
			
3	Symmetry	On the *bide* mat as well as on the plates used for the rituals, there are two-dimensional shapes with folding symmetry, which refers to the way a plane is folded, and the folding overlaps on top of each other. The folding trace serves as the axis of symmetry, which divides the plane into two equal parts.	
		This is evident in the rhombus pattern on the *bide* mat which has two symmetry axes and the circle pattern in the offering plate which has infinite (n) folding symmetry.	 Folding symmetry in the *bide* mat
			
			 The symmetry on the bamboo plate for placing offerings

No.	Mathematical Concept	Matemathics Identified	Activity/ Object
4	Three-dimensional figures	The body of the *dango* has a cuboid shape. A cuboid is a quadrilateral prism with rectangles as the bases. A cuboid has 6 sides, 12 edges, and 8 angles. A cuboid made of six equal squares is called a cube. The surface area and volume formulas for a cuboid are as follows: Surface Area $2(pl + pt + lt)$ Volume plt Description: p = length l = width t = height The roof of *dango* has a tringular prism shape. Prism is a three-dimensional figure that is formed by two congruent parallel planes and other planes that intersect the two planes according to the parallel lines. The area and volume formulas for a triangular prism are as follows. Area in general $L = 2\ x\ L_a + K_a x\ t$ $with\ the\ base\ length\ of$ $AB = \sqrt{AC + BC}$ Volume $\frac{1}{2} L_a\ x\ t$ Description: L_a = Base area K_a = Base perimeter t = height AB = Longest side of base AC, BC = Diagonal sides of base A tube or a cylinder is a three-dimensional figure formed by two identical parallel circles as the bases which are joined by a curved rectangle with a length of the circle's circumference.	  Cuboid in the field hut or *dango*   Triangular prism as the roof of the *dango*

No.	Mathematical Concept	Matemathics Identified	Activity/ Object
		The surface area and volume formulas for a cylinder are as follows: Surface Area $2\pi r(r+t)$ Volume $\pi r^2 t$ Description: π = 3.14 or 22/7 r = radius t = height	 The wooden dibber staff has a cylinder shape.  The bamboo container for cooking the traditional rice cake dish (*lamakng*) has a cylinder shape.
		A cone is a special three-dimensional pyramid-like figure with the base of a circle. It has 2 sides, 1 edge and 1 angle. The area and volume formulas for a cone are as follows: Surface Area $\pi rs + \pi r^2$ *atau* $\pi r(s+r)$ Volume $\frac{1}{3}\pi r^2 t$ Description: π = 3.14 or 22/7 r = radius s = apothem t = height	  The dibber staff consists of a long tube-shaped staff and a cone as the spear at the end of the staff.

No.	Mathematical Concept	Matemathics Identified	Activity/ Object
			 A container for keeping the offerings in the form of a tube and a cone. The cone is placed on top to cover the offerings placed under the plate.
5	Two-dimensional shapes	A circle is a two-dimensional shape in which the distance of all points in the circumference to the fixed point in the center (P) are equal. The area and perimeter formulas for a circle are as follows. Area $\pi\, r^2$ or $\frac{1}{4}\pi\, D^2$ Perimeter $2\,\pi\, r$ or $\pi\, D$ Description: π = 3.14 or 22/7 r = radius D = diameter	 The plates and bamboo tray for placing the offerings are the shape of a circle.  The sowing tool is made of a tubular-shaped wood.

No.	Mathematical Concept	Matemathics Identified	Activity/ Object
		A rectangle is a two-dimensional shape with two equal opposite sides, in which all four angles are 90°. The area and perimeter formulas for a rectangle are as follows. Area $p\ x\ l$ Perimeter $2\ (p + l)$ Description: p = length l = width	 The wall of *dango* is made of a rectangular board.
		A triangle is a two-dimensional shape with three sides and three angles. The sum of angles of a triangle is 180°. An equilateral triangle has 3 equal sides and three equal angles of 60°. The area and perimeter formulas for a triangle are as follows. Area $\frac{1}{2} a\ t$ Perimeter $a + 2b$ Description: a = base t = height b = diagonal side	 The front and back sides of the *dango* roof have a triangle shape.
		A parallelogram is a quadrilateral two-dimensional shape with four equal opposite parallel sides. The area and perimeter formulas for a parallelogram are as follows. Area $a\ t$ Perimeter $2\ (p\ l)$ Description: a = base t = height p = length l = width	 The weaving pattern on the *bide* mat has a parallelogram shape.

No.	Mathematical Concept	Matemathics Identified	Activity/ Object
		A rhombus is a quadrilateral two-dimensional with four equal sides and equal opposite angles. A rhombus is a parallelogram with four equal sides. The area and perimeter formulas for a rhombus are as follows. Area $\frac{1}{2} d_1 d_2$ Perimeter $4s$ Description: d = diagonal side s = side	 The weaving pattern on the *bide* mat has a rhombus shape.
		A trapezoid is a quadrilateral two-dimensional shape with two opposite parallel sides. The area and perimeter formulas for a trapezoid are as follows. Area $\frac{1}{2}(a+b)\,t$ Perimeter $s+s+s+s$ Description: a = top (parallel side) b = bottom (parallel side) t = height s = side	 The weaving pattern on the *bide* mat has a trapezoid shape.

Based on the discussion, the farming activities of the Dayak Ahe people involve the following: (1) clearing the land (*nabas uma*), (2) cutting down trees (*nabang*), (3) burning the field (*nunu uma*), (4) cleaning the field after the burning (*marasehan uma*), (5) sowing (*nugal uma*), (6) weeding (*ngarumput uma*), and (7) harvesting the rice (*bahanyi*). These farming stages include ritual ceremonies, including *nabo' panyugu nagari*, *nabo' panyugu tahutn*/*naik dango*, *ngawah*, *batanam padi* (consisting of *ngalabuhatn*, *ngamalo lubakng tugal*, and *ngiliratn panyakit padi*), *ngaladakng buntikng padi*, *ngabati'*, and *ngaleko*. The series of processes contain ethnomathematics values, namely points and lines, three-dimensional figures, two-dimensional shapes, counting, and symmetry of shape.

Farming Activities in Dayak Culture for Contextual Mathematics Teaching

The Dayak people are no strangers to farming activities. Therefore, farming can be used as a contextual learning problem for students from the Dayak tribe or those residing in Kalimatan, especially in Tunang village, Mempawah Hulu district, Landak regency. Mathematics learning with cultural context is more known as ethnomathematics. According to D'Ambrosio (1985), ethnomathetics is a study of mathematics which takes into account the cultural considerations where mathematics exists by understanding the mathematical logic and system used by a community.

In mathematics learning, ethnomathematics studies include all aspects, including architecture, weaving and sewing, agriculture, kinship, ornaments, spiritualism, and religious practices, that are frequently in line with the patterns happening in nature or commanding the system of abstract ideas. Learning math can enhance knowledge, outlook, and more logical and structured ways of thinking in solving either mathematical problems or problems in other disciplines in life (Mulyana, 2011). Subanji (2011) states that mathematics is important to learn as it is one of the disciplines in which the applications are often used to solve life problems. Through mathematics which incorporates the daily life and culture, it is expected that students will find it easier to understand the lessons.

The following are examples of the mathematics problems which can be applied based on the mountain rice farming process of the Dayak Kanayatn tribe: Questions on two-dimensional shapes (If the wall of a dango is rectangular and consists of 10 boards with a size of 200 x 20 cm each, what is the area of the dango wall?, If the roof of a dango is a triangle with the longest side of 200 cm and the diagonal side of 150c m; What is the area of the triangular dango roof?) and Questions on three-dimensional figures (Mr. Aciap wants to build a dango in his field with a length of 300 cm, width of 200 cm, and height of 200 cm. If Mr. Aciap has a board with a length of 300 cm and width of 20 cm, how many boards does he need to build the dango?; Mr. Adi has a sowing tool that he regularly uses. He then measures the diameter and length of his sowing tool and finds that the tool has a diameter of 7 cm, while the length of the pointed end is 15 cm and the length of the staff is 80 cm. What is the volume of Mr. Adi's sowing tool?).

CONCLUSION

The Dayak Kanayatn tribe, especially the Dayak Ahe community, still applies a traditional way of living and some still do rice farming. Mountain rice is one of the types of rice that grows in dry soil and does not require much water. It is suitable to grow in the Tunang village where the Dayak Ahe people reside. The process of cultivating mountain rice done by the Dayak Ahe community in Tunang village is inseparable from the elements of culture and customs that are inherited from the ancestors. The traditional rice farming process consists of several stages, namely clearing the land (*nabas uma*), cutting down trees (*nabang*), burning the field (*nunu uma*), cleaning the field after the burning (*marasehan uma*), sowing (*nugal uma*), weeding (*ngarumput uma*), and harvesting the rice (*bahanyi*). These activities, in addition to the accompanying ritual ceremonies and farming tools, contain mathematical values. The mathematical concepts identified in the mountain rice farming process include the relationship of points and lines, three-dimensional figures, two-dimensional shapes, counting, and symmetry of shape.

REFERENCES

Ahyat, I. S. (2016). Masyarakat Dayak di Kesultanan Kutai pada Abad Ke-19. *Paradigma, Jurnal Kajian Budaya*, *1*(1), 28–42. https://doi.org/10.17510/paradigma.v1i1.3

D'Ambrosio, U. (1985). Ethnomathematics and its place in the history and pedagogy of mathematics. *For the Learning of Mathematics*, *5*(1), 44–48. http://www.jstor.org/stable/40247876

Djuweng, S. (2003). *Tradisi lisan Dayak yang tergusur dan terlupakan*. Institut Dayakologi.

Farukhi, F., & Afrida, V. (2008). *Mengenal 33 Provinsi Indonesia Kalimantan Barat*. Sinergi Pustaka Indonesia.

Klinken, G. van. (2006). Colonizing Borneo: state-building and ethnicity in Central Kalimantan. *Indonesia*, *81*, 23–49. https://www.jstor.org/stable/40376381

Lontaan, J. U. (1975). *Sejarah hukum adat dan adat istiadat Kalimantan Barat*. Pemda Tingkat I Kalimantan Barat.

Mathew, R. (2012). Effect of methyl jasmonate and chitosan on growth characteristics of Ocimum basilicum L., Ocimum sanctum L. and Ocimum gratissimum L. cell suspension cultures. *African Journal of Biotechnology*, *11*(21), 4759–4766. https://doi.org/10.5897/AJB11.3183

Mulyana, R. (2011). *Mengartikulasikan pendidikan nilai*. Alfabeta.

Priskila, H. (2010). *Tradisi naik dango suku Dayak Kanayatn kajian asal usul, proses ritual, fungsi, dan nilai* [Universitas Sanata Dharma]. https://repository.usd.ac.id/25455/2/044114031_Full%5B1%5D.pdf

Saputra, H. S. P. (2007). *Memuja mantra: Sabuk Mangir dan Jaran Goyang Masyarakat Suku Using Banyuwangi*. LKiS.

Schiller, A. (2007). Activism and identities in an East Kalimantan Dayak Organization. *The Journal of Asian Studies*, *66*(1), 63–95. https://doi.org/10.1017/S002191180700006X

Sellato, B. (1994). *Nomads of the Borneo rainforest: The economics, politics, and ideology of settling down*. University of Hawaii Press.

Subanji, S. (2011). *Teori berpikir pseudo penalaran kovariasional*. Penerbit Universitas Negeri Malang (UM Press).

Wallace, A. R. (2015). *Sejarah Nusantara : The Malay archipelago* (A. Asnawi, S. Abdullah, S. Sutrisno, & A. Erdiani (trans.)). Indoliterasi.