



Analysis of Environmental Wisdom as a Form of Environmental Awareness in the Case of *Bat Gette* Agriculture in Matotonan Village, South Siberut District

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ABSTRACT

Environmental wisdom represents a form of intelligence, creativity, innovation, and traditional knowledge held by local communities in managing and conserving ecosystems and natural resources. The Matotonan community, located in South Siberut District, Mentawai Islands Regency, practices the *Bat Gette* agricultural system to produce taro (*Colocasia esculenta*) as a means to secure food resources while preserving environmental sustainability. As a community residing within the Siberut National Park conservation area, it is important to study and understand their level of environmental awareness to ensure the long-term protection of the conservation area. This research aims to assess the environmental awareness of Matotonan residents who cultivate taro (*Colocasia esculenta*) through the *Bat Gette* agricultural system. The measurement of environmental awareness was conducted using the New Environmental Paradigm (NEP) method. The findings indicate that the Matotonan community practicing *Bat Gette* farming is categorized as environmentally conscious or pro-NEP, with an ecological worldview that emphasizes limits to growth.

Keywords: *Environmental wisdom, New Environmental Paradigm, Bat Gette Agricultural, Conservation Area, Limits to Growth.*

INTRODUCTION

The Matotonan community, the Siberut National Park conservation area, maintains a deeply interconnected way of life, particularly socially, with the sustainability and preservation of the Siberut National Park. As a homogeneous indigenous society, their actions are strongly influenced by long-held beliefs practiced and passed down through generations. Erwin (2016) states that environmental wisdom within a community represents an understanding inherited across generations. More than just intelligence, innovation, or traditional knowledge, environmental wisdom must also demonstrate tangible benefits for the community in developing its civilization.

In South Siberut District, Mentawai Islands Regency, the Matotonan community cultivates taro (*Colocasia esculenta*) using ponds they refer to as *Bat Gette*. *Bat Gette* is a taro production system that has been practiced by the Matotonan community for generations. Taro is planted in ponds approximately 80 cm deep, with an average area of 50 m² per pond. When establishing a new pond, planting material is sourced by transferring shoots from existing ponds or collecting them from areas near the river. The taro harvest cycle, locally called *gette pulegleg*, lasts about six months for newly planted or transplanted ponds and seven to eight months for older ponds. The community typically organizes planting by creating planting lanes or by staggering planting and harvesting periods within each pond to ensure a continuous supply.

According to Syofyan (2018), environmental wisdom reflects human awareness of nature's essential role in sustaining life, using resources according to actual needs, and developing various rules and methods to maintain ecological balance—an understanding aligned with the concept of local wisdom in the modern

scientific paradigm. Environmental awareness, as defined by Sulastris (2019), is a perspective that recognizes the importance of the natural environment for human life, culminating in significant positive shifts in how people perceive and interact with the natural world.

Matotonan Village, located adjacent to and within the boundaries of the Siberut National Park—designated by the Decree of the Minister of Forestry No. 407/Kpts-II/93 dated 10 August 1993, requires careful attention and preservation of all its components, particularly the social aspects of the community, to ensure the continued conservation of the Siberut National Park as a protected area. This aligns with the Regulation of the Minister of Environment and Forestry (PerMen LHK No. P.43 of 2017) concerning the empowerment of communities surrounding Nature Reserves and Nature Conservation Areas, which states that community empowerment around such areas aims to promote independence and well-being to support the sustainability of conservation areas. This is further reinforced by the Director General of Natural Resources and Ecosystem Conservation (Dirjen KSDAE) Regulation No. P.7 of 2020 that outlines procedures for developing community empowerment plans around Nature Reserves, Nature Conservation Areas, and Game Reserves.

Bat Gette, as a food security system embedded with environmental wisdom and practiced by the community in Matotonan Village within a conservation area, requires further investigation, particularly regarding its relationship to the community's social structure. This study will employ the New Environmental Paradigm (NEP) theory to assess and understand the Matotonan community's environmental awareness about their *Bat Gette* system practice.

Duncan and Dunlap (Duncan, 1972 ; Dunlap et al., 1978) introduced the concept of the New Environmental Paradigm (NEP), which emerged from the environmental movement in the United States during the 1960s and 1970s. This paradigm was inspired by the publication of *Silent Spring* by Rachel Carson and shaped by the work of social psychologists who hypothesized that the dominant worldview, known as the Dominant Social Paradigm (DSP), would begin to shift toward greater environmental concern. The DSP, which emphasizes human dominance over nature, was expected to evolve into a paradigm that better acknowledges environmental limits and ecological interdependence.

The shift from an anthropocentric perspective, where humans are viewed as the central and most significant entities in the universe, to a more environmentally conscious worldview, as embodied by the NEP, is expected to help stabilize the ecological functions necessary for human life. According to Hannigan (2006), the DSP, which developed during the Industrial Revolution, has led to significant environmental degradation. Therefore, this anthropocentric paradigm should be replaced with a new paradigm that centers environmental issues and recognizes humans as an integral part of nature. In this view, humans can no longer exploit nature by forcing the land and genetically modified plants to produce maximum yields at any cost.

This transition from anthropocentrism to ecocentrism, where the environment or nature becomes the central focus, is also emphasized by Hannigan, who argues that future sociological practice must account for the relationship between humans/society and the biophysical environment. In his book *Environmental Sociology*, Hannigan supports Riley Dunlap's view of the NEP as a new paradigm that redefines the relationship between society and the environment, no longer neglecting the biophysical dimensions.

Dunlap and Van Liere (Edgell et al., 1978) argue that ecological problems often stem from traditional values and widespread societal beliefs that support the Dominant Social Paradigm. These values typically emphasize faith in science and technology, free-market economics, and private property rights. The Dominant Social Paradigm (DSP) is viewed as being contrary to ecological principles, and if it remains unchallenged, it has the potential to contribute significantly to environmental degradation. The principles of the NEP, as conceptualized in environmental sociology and psychology, reflect a transformation in societal attitudes and values toward the environment. This shift moves away from the traditional

anthropocentric worldview, where humans are seen as separate from and superior to nature, toward a more ecocentric perspective that acknowledges the interconnectedness and interdependence of humans and the natural world. The core principles of the New Environmental Paradigm include:

1. **Ecocentrism:** This principle emphasizes the intrinsic value of nature and the importance of maintaining ecological integrity for its own sake, not solely for human benefit.
2. **Interconnectedness:** This recognizes the complex web of relationships between all living beings and their environment, highlighting the interdependence of human societies and nature.
3. **Sustainability:** The NEP advocates for sustainable practices that meet present needs without compromising the ability of future generations to meet their own needs. It involves balancing ecological, social, and economic considerations to ensure long-term environmental health and human well-being.
4. **Precautionary Approach:** The NEP encourages preventive measures to address environmental threats, even without conclusive scientific evidence. This principle emphasizes the importance of caution to avoid irreversible damage to ecosystems.
5. **Respect for Diversity:** This promotes the appreciation of biodiversity and cultural diversity, recognizing the value of diverse ecosystems and human cultures in maintaining global ecological and social resilience.
6. **Community and Participation:** The NEP stresses the importance of community involvement and participatory decision-making in environmental governance. It acknowledges that sustainable solutions are more likely to succeed when they involve local stakeholders and reflect diverse perspectives.

Overall, the New Environmental Paradigm represents a holistic and forward-thinking approach to environmental issues, recognizing the intrinsic value of nature and the need for collective action to ensure a sustainable future for all life on Earth.

METHODS

This study is a systematic effort to collect data and analyze the level of environmental awareness associated with the implementation of the *Bat Gette* agricultural system within the Matotonan Community. A quantitative research method was employed to measure the community's environmental awareness about the *Bat Gette* farming practice. Housewives were selected as the primary practitioners of the *Bat Gette* system in the Matotonan Community as the respondents in this study.

Environmental Awareness

This study investigates the environmental awareness that underpins the *Bat Gette* agricultural system practiced by the Matotonan Community in the cultivation of taro (*Colocasia esculenta*) as a staple food crop. To assess this awareness, the research employs the New Environmental Paradigm (NEP) scale, developed by Dunlap et al. (2000), which serves as a widely recognized tool for measuring pro-environmental attitudes. The NEP framework allows for the categorization of respondents into either pro-environmental (Pro-NEP) or anthropocentric/anti-NEP groups, based on their ecological worldview.

This analysis not only evaluates the level of environmental consciousness within the community but also provides insights into the motivations behind their continued use of the *Bat Gette* system. Data were analyzed using correlational statistical methods with the assistance of SPSS (Statistical Package for the Social Sciences), version 24. The study utilizes 15 items from the NEP scale, as outlined by Dunlap (Dunlap et al., 2000), which are as follows:

1. Humans are approaching the limit of the number of people the Earth can support.
2. Humans have the right to modify the natural environment to meet their needs.
3. When humans interfere with nature, it often produces disastrous consequences.
4. Human ingenuity will ensure that the Earth remains livable.
5. Humans are abusing the environment.
6. The Earth has plenty of natural resources if we learn how to develop them.
7. Plants and animals have as much right as humans to exist.
8. The balance of nature is strong enough to cope with the impacts of modern industrial nations.
9. Despite our special abilities, humans are still subject to the laws of nature.
10. The so-called “ecological crisis” facing humankind has been greatly exaggerated.
11. The Earth is like a spaceship with limited room and resources.
12. Humans were meant to rule over the rest of nature.
13. The balance of nature is very delicate and easily upset.
14. Humans will eventually learn enough about how nature works to be able to control it.
15. If things continue on their present course, we will soon experience a major ecological catastrophe.

To reveal the community's environmental worldview, this research will assess it using the five categories of environmental perspectives designed by Dunlap (2000). These categories of environmental worldview are grouped as follows:

Table 1. Environmental Perspective Category (Dunlap, 2000)

Category	NEP Scale Items
Limiting growth	1, 6, 11
Anti-anthropocentrism	2, 7, 12
Vulnerability to natural disasters	3, 8, 13
Rejection of exemptionalism	4, 9, 14
Possibility of an environmental crisis	5, 10, 15

The categories of environmental worldview examined in this study reflect the perspectives held by members of the Matotonan community who practice the *Bat Gette* agricultural system.

Reliability Test of the New Environmental Paradigm (NEP) Scale

The reliability test used in this study is the internal consistency reliability test, which evaluates the extent to which items within a scale correlate with one another (Moshood et al., 2020). Internal consistency was assessed using the Cronbach's Alpha coefficient, as recommended by Malkewitz et al. (2022). According to Moshood et al. (2020), this method also helps identify inconsistent items within the scale. Cronbach's Alpha is a commonly used reliability metric ranging from 0 to 1 (Joseph F. Hair et al., 2010), where higher values indicate greater internal consistency and reliability. In this study, a minimum acceptable Cronbach's Alpha value of 0.60 was adopted, as a coefficient of 0.60 or higher is considered to reflect adequate internal consistency. The Cronbach's Alpha reliability coefficient values used in this study are presented in the following table:

Table 2. Cronbach's Alpha reliability level (Joseph F. Hair et al., 2010)

Cronbach Alpha Value	Reliability Level
0.0 - 0.20	Less Reliable
>0.20 – 0.40	Somewhat Reliable
>0.40 – 0.60	Moderately Reliable
>0.60 – 0.80	Reliable
>0.80 – 1.00	Highly Reliable

Calculation of the New Environmental Paradigm (NEP) Scale

This quantitative study employs the NEP scale to analyze variables related to pro-environmental behavior using a correlational research design. Data were analyzed through correlational tests using the Statistical Package for the Social Sciences (SPSS) software.

Respondents were asked to indicate their level of agreement with each item on the NEP scale using a five-point Likert scale: strongly agree, agree, neutral, disagree, and strongly disagree. Responses of strongly agree and agree reflect agreement with the NEP item, indicating alignment with pro-environmental attitudes. Conversely, responses of disagree and strongly disagree signify disagreement, representing a more anthropocentric or anti-environmental stance. The neutral or unsure option reflects a non-committal response, indicating that the respondent neither agrees nor disagrees with the item. To determine whether the residents of Matotonan Village who practice the *Bat Gette* agricultural system hold a Pro-NEP (ecocentric) or Anti-NEP (anthropocentric) worldview, score categorization was carried out using the 60th and 80th percentile method, as applied in the study by Friska (2023). The distribution of NEP scale categories is presented in Table 3.

Table 3. Distribution of NEP Scale Categories (Friska, 2023)

NEP Category	Score Range	Percentage (%)	Distribution of Number of Participants (n=68)
Low	8-24	5,88	
Medium	25-32	41,18	
High	33-40	52,94	

Data Collection

The researcher employed a quantitative research method to achieve the first research objective—identifying the underlying reasons why the Matotonan community practices the *Bat Gette* agricultural system in cultivating taro (*Colocasia esculenta*). A total of 15 NEP scale items were distributed to respondents, who in this case were housewives from each household engaged in *Bat Gette* farming within the Matotonan community. The NEP scale is designed to reveal five categories of ecological worldview: limits to growth, anti-anthropocentrism, fragility of nature's balance, rejection of human exemptionalism, and possibility of an ecological crisis.

This study focuses on the Matotonan community that practices the *Bat Gette* agricultural system. The targeted population comprises women who serve as housewives in each family unit. This focus is based on the fact that in the *Bat Gette* system, all stages of activity—from pond construction to planting, harvesting, and food processing—are primarily carried out by housewives. The study does not consider the size of the *Bat Gette* ponds owned or managed, as the *Bat Gette* farming system in the Matotonan community is relatively homogeneous.

The researcher determined the sample size based on a sampling frame consisting of the names of all housewives in the Matotonan Community who practice the *Bat Gette* agricultural system. The sample size was calculated using Slovin's formula, which is commonly employed to determine the minimum required

sample from a finite population. Slovin's formula is particularly useful for estimating sample sizes when dealing with limited populations, ensuring that the sample is representative while maintaining statistical reliability. The formula is as follows:

$$n = \frac{N}{1 + Ne^2}$$

Where:

n = sample size

N = total population

e = margin of error (typically 0.05 or 5% for a 95% confidence level)

In this study, the researcher established a sample frame by compiling a complete list of housewives in the Matotonan Community who practice the Bat Gette agricultural system. The sample was selected using a random sampling method, with individuals from the population randomly selected. Random sampling is a technique that ensures every member of the population has an equal chance of being selected, based on an evaluation of the sampling frame and the determination of an appropriate interval. To ensure that every respondent in the sample frame had an equal opportunity to be included in the study, the researcher used Microsoft Excel to generate random selections of the desired sample size. Environmental awareness data was processed using the Statistical Package for the Social Sciences (SPSS) and Microsoft Excel. The NEP scale responses were analyzed in SPSS to assess the reliability of the data, followed by categorization using the 60 and 80 percentile method. The environmental worldview categories were then determined based on the highest mean scores, which indicate the dominant ecological perspective within the Matotonan Community.

In the data analysis stage, NEP scale scores that had been categorized using the percentile method were used to identify the percentage and classification of environmental awareness among Matotonan villagers. These classifications indicate whether the community members fall under the Pro-NEP (ecocentric) or Anti-NEP (anthropocentric) groups. The final stage, data interpretation, involved reviewing the results of the NEP scale measurements to assess the environmental attitudes and worldviews of the Matotonan community members engaged in the Bat Gette farming system.

RESULTS AND DISCUSSION

It is essential to assess the environmental attitudes of the Matotonan Community in their practice of the *Bat Gette* agricultural system. This assessment was conducted using the 15-item New Environmental Paradigm (NEP) scale, which was distributed to selected respondents representing the community. The results of the NEP scale responses—reflecting the environmental attitudes of Matotonan residents engaged in *Bat Gette* farming—are presented in the following table.

Table 4. Environmental Awareness of *Bat Gette* from Respondents (Data Processing Results, 2024)

No	NEP Items	Score Value
1	Humans are approaching the limit of the number of people the Earth can support.	279
2	Humans have the right to modify the natural environment to meet their needs.	197
3	When humans interfere with nature, it often produces disastrous consequences.	266
4	Human ingenuity will ensure that the Earth remains livable.	159
5	Humans are abusing the environment.	105
6	The Earth has plenty of natural resources if we just learn how to develop them.	180
7	Plants and animals have as much right as humans to exist.	285
8	The balance of nature is strong enough to cope with the impacts of modern industrial nations.	144
9	Despite our special abilities, humans are still subject to the laws of nature.	293
10	The so-called “ecological crisis” facing humankind has been greatly exaggerated.	122
11	The Earth is like a spaceship with very limited room and resources.	274
12	Humans were meant to rule over the rest of nature.	143
13	The balance of nature is very delicate and easily upset.	272
14	Humans will eventually learn enough about how nature works to be able to control it.	153
15	If things continue on their present course, we will soon experience a major ecological catastrophe.	294
Total		3166

The data collected from respondents in the Matotonan community using the NEP (New Environmental Paradigm) scale needs to be categorized to facilitate analysis. According to Thomson, NEP scale scores are divided into three equal categories using the 60 and 80 percentile method (Friska, 2023). Based on the calculated range of NEP scores from interview data using the NEP scale in the Matotonan community, four respondents (5.88%) were classified into the low category, 28 respondents (41.18%) into the medium category, and 36 respondents (52.94%) into the high category. The largest percentage falling within the high NEP category indicates that the majority of Matotonan residents practicing the *Bat Gette* agricultural system possess a high level of ecological awareness or are pro-NEP.

In addition to grouping respondents into pro-ecological (NEP) and anti-NEP categories, Dunlap (2000) further developed the NEP scale into what is known as the Revised NEP, categorizing it into five dimensions of environmental worldview:

1. Limits to Growth
 - a. Item (1): Humans are approaching the limit of the number of people the Earth can support.
 - b. Item (6): The Earth has plenty of natural resources if we just learn how to develop them.
 - c. Item (11): The Earth is like a spaceship with very limited room and resources.
2. Anti-Anthropocentrism
 - a. Item (2): Humans have the right to modify the natural environment to suit their needs.
 - b. Item (7): Plants and animals have as much right as humans to exist.
 - c. Item (12): Humans were meant to rule over the rest of nature.

3. Fragility of Nature's Balance

- a. Item (3): When humans interfere with nature, it often produces disastrous consequences.
- b. Item (8): The balance of nature is strong enough to cope with the impacts of modern industrial nations.
- c. Item (13): The balance of nature is very delicate and easily upset.

4. Rejection of Human Exemptionalism

- a. Item (4): Human ingenuity will ensure that we do not make the Earth unlivable.
- b. Item (9): Despite our special abilities, humans are still subject to the laws of nature.
- c. Item (14): Humans will eventually learn how to control the environment.

5. Possibility of an Ecological Crisis

- a. Item (5): Humans are severely abusing the environment.
- b. Item (10): The so-called "ecological crisis" facing humankind has been greatly exaggerated.
- c. Item (15): If things continue on their present course, we will soon experience a major ecological catastrophe.

This study also classifies the NEP scale into these five parameters to determine which environmental worldview category is most dominant among Matotonan residents who practice the *Bat Gette* agricultural system. The following section presents the results of item-by-item calculations of the NEP scale, grouped and calculated as percentages based on responses ranging from strongly disagree, disagree, neutral, agree, to strongly agree.

Table 5. Percentage results, average, and standard deviation for each NEP scale item (Data Processing Results, 2024)

Ecological Perspective Categories	Items	Percentage					Mean	Std. Dev
		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree		
Limits to Growth	1	0.00%	1.47%	22.06%	41.18%	35.29%	4.10	0.789
	6	1.47%	47.06%	36.76%	14.71%	14.71%	2.65	0.743
	11	0.00%	11.76%	14.71%	32.35%	41.18%	4.03	1.014
Anti Antroposentrisme	2	5.88%	19.12%	54.41%	20.59%	0.00%	2.90	0.789
	7	0.00%	4.41%	7.35%	52.94%	35.29%	4.19	0.753
	12	27.94%	38.24%	29.41%	4.41%	0.00%	2.10	0.860
Fragility of Nature's Balance	3	0.00%	0.00%	22.06%	64.71%	13.24%	3.91	0.587
	8	13.24%	61.76%	25.00%	0.00%	0.00%	2.12	0.607
	13	0.00%	1.47%	20.59%	54.41%	23.53%	4.00	0.707
Rejection of Human Exemptionalism	4	1.47%	63.24%	35.29%	0.00%	0.00%	2.34	0.503
	9	0.00%	0.00%	5.88%	57.35%	36.76%	4.31	0.575
	14	17.65%	39.71%	42.65%	0.00%	0.00%	2.25	0.735
Possibility of an Ecological Crisis	5	50.00%	45.59%	4.41%	0.00%	0.00%	1.54	0.580
	10	38.24%	48.53%	8.82%	4.41%	0.00%	1.79	0.778
	15	0.00%	2.94%	4.41%	50.00%	42.65%	4.32	0.695

Based on the results presented in Table 5 above, it is evident that the environmental worldview category related to limits to growth, as measured by NEP items 1, 6, and 11, represents the category with the highest mean score. For NEP item 1, which asked respondents whether "humans are approaching the limit of the number of people the Earth can support," respondents from the Matotonan community tended to agree, with 41.18% selecting "agree." For item 6, which asked whether "the Earth has plenty of natural resources if we learn how to develop them," the majority of respondents disagreed, with 47.06% selecting "disagree." In item 11, which states that "the Earth is like a spaceship with very limited space and resources," 41.18% of respondents strongly agreed.

In the second environmental worldview category, anti-anthropocentrism, three NEP items were included: 2, 7, and 12. For item 2, which asked whether "humans have the right to modify the natural environment to meet their needs," the dominant response was neutral, with 54.41% selecting this option and none selecting "strongly agree." For item 7, which asked whether "plants and animals have as much right as humans to exist," the majority agreed (52.94%). For item 12, which asked whether "humans were created to rule over the rest of nature," 38.24% of respondents disagreed.

The third category, fragility of nature's balance, was assessed using NEP items 3, 8, and 13. For item 3, which asked whether "when humans interfere with nature, it often produces disastrous consequences," 64.71% of respondents agreed. For item 8, which questioned whether "the balance of nature is strong enough to cope with the impacts of modern industrial nations," 61.76% disagreed. For item 13, which asked whether "the balance of nature is very delicate and easily upset," 54.41% of respondents agreed.

The fourth environmental worldview category, rejection of human exemptionalism, was assessed using items 4, 9, and 14. For item 4, which asked whether "human ingenuity will ensure that the Earth remains livable," 63.24% of respondents disagreed. In item 9, which stated that "despite our special abilities, humans are still subject to the laws of nature," the majority (57.35%) agreed. For item 14, which asked whether "humans will eventually learn how to control nature," the dominant response was neutral, with 42.65% of respondents selecting this option.

The fifth environmental worldview category, possibility of an ecological crisis, was assessed through NEP items 5, 10, and 15. For item 5, which asked whether "humans are severely abusing the environment," 50.00% of respondents strongly disagreed. For item 10, which questioned whether "the so-called ecological crisis facing humankind has been greatly exaggerated," 48.53% disagreed. In item 15, which asked whether "we will soon experience a major ecological catastrophe if current environmental disregard continues," 50.00% of respondents agreed.

After calculating the mean and the standard deviation for each NEP item, both were subsequently determined for each of the five environmental worldview categories. This was done to identify the most dominant ecological worldview among the Matotonan community members. The mean scores and standard deviations for each worldview category are presented in the following diagram.

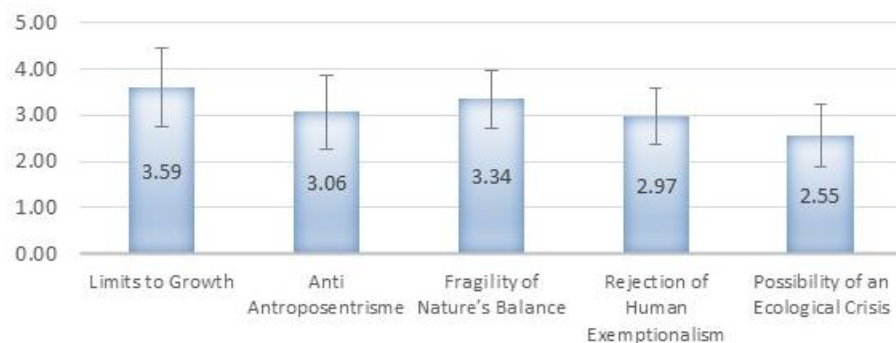


Figure 1. Mean scores and standard deviations on the 5 NEP subscales

Based on the mean scores for each category of environmental worldview derived from the NEP scale administered to 68 respondents in the Matotonan community who practice the Bat Gette agricultural system, it was found that the limits to growth category represents the ecological worldview with the highest mean score, at 3.59. This corresponds to the highest total scale score of 733 in this category. Accordingly, it can be concluded that the Matotonan community is characterized as a society with an environmental worldview that emphasizes limits to growth.

Research utilizing the New Environmental Paradigm (NEP) instrument revealed that the Matotonan community, which implements the Bat Gette agricultural system, can be classified as environmentally conscious or pro-ecological (NEP). The study's findings suggest that the community's homogeneous social structure reinforces a way of life that remains authentic and deeply embedded in tradition, largely unaffected by outside influences or alternative perspectives, including their agricultural methods. As a culturally uniform group grounded in the Aratsabulungan belief system, the community consistently expresses its distinctive values through daily practices.

The Matotonan community demonstrates that every aspect of their life, particularly those connected to nature, is regulated by customary cultural norms, such as taboos, which they call *kei-kei*. According to Lubis (2005), rules and regulations framed as 'local wisdom' are created by communities through religious-magical taboos and customary laws. Mitchell (2003) further notes that people who are environmentally conscious tend to develop simple rules, often discovered through a process of trial and error, by continuing practices that are believed to preserve nature and abandoning those that lead to environmental degradation.

The use of the NEP (New Environmental Paradigm) instrument in this study also revealed that the Matotonan community, which practices the Bat Gette agricultural system, can be categorized as a pro-environmental or pro-ecological (NEP) group. The findings indicate that the ecological worldview most dominant within this community is limits to growth, suggesting that all interactions with their environment are carefully considered with attention to the Earth's capacity to provide resources sustainably. This characterizes the community with a high degree of ecological intelligence in managing and regulating environmental carrying capacity.

This is directly reflected in their agricultural practices, particularly in the Bat Gette system, where the utilization of taro (*Colocasia esculenta*) tubers is organized according to a row-based harvest pattern. They harvest only the largest tubers while replanting new shoots at harvest time to ensure continued productivity. This utilization pattern—aligned with need and environmental capacity—reflects the essence of environmental wisdom. As stated by Syofyan (2018), individuals who are aware of nature's essential role in human life will use its resources according to necessity and develop various rules and methods to maintain ecological balance, a notion consistent with the concept of local wisdom in modern scientific knowledge.

Given the broad scope of environmental science, it is essential to adopt a multidisciplinary approach to foster integration and interconnectedness with nature, as emphasized by Suriyanti et al. (2022). This study, through the NEP instrument, found that the environmental awareness within the Matotonan community is driven primarily by their need for food security. Bat Gette, as a food-producing system, holds critical importance in their lives. The unique landscape and specific potentials have shaped their environmental awareness, and the environmental threats they face, guiding them to ensure sustainable yield through continuous adaptation. These adaptations—initially developed through trial and error—have become embedded and solidified into their cultural rules and norms.

The connection between food needs and environmental adaptation exemplifies practical environmental wisdom, echoing Rokeach's theory as cited by Dunlap (2000). Rokeach asserts that primitive beliefs form

the core of an individual's belief system, representing fundamental truths about physical and social reality and beliefs about nature and humanity's role within it. These beliefs are measurable through the NEP items, representing essential components of a community's environmental belief system.

As explained in the background of this research, Matotonan Village is located adjacent to the Siberut National Park. As residents living in and around a conservation area, this community differs significantly from more modern groups. Their perspectives are primarily shaped by lived experience rather than formal education. This contrasts with earlier NEP-based studies conducted by Caron (1989), Noe & Snow (1989) in the United States, Edgell & Nowell (1989) in Canada, Widegren (1998) in Sweden, Gooch (1995) in the Baltic countries, Furman (1998) in Turkey, Pierce (1987) in Japan, and Bechtel, Verdugo & Pinheiro (1999) and Schultz & Zelezny (1998) on university students in Latin American and Spanish-speaking countries, as well as Dunlap and Van Liere's seminal study (1978) in Washington State. Although these previous studies strongly support NEP values, they reflect environmental awareness grounded in formal knowledge and education.

In contrast, environmental awareness within the Matotonan community stems purely from adaptive efforts and experiential learning aimed at maintaining their environment and ensuring survival. The *Bat Gette* system, as a food production practice, constitutes a closed-cycle exchange model intended to meet the subsistence needs of the community. Although some forms of exchange, such as bartering, dowry payments (locally referred to as *alat toga*), and customary fines (*tulou*) do occur, these remain limited and have not extended into larger external markets

This absence of large-scale market interaction significantly influences the basis for their environmental awareness and worldview. As a pro-NEP (ecologically conscious) community characterized by a limit to growth perspective, the Matotonan community may face potential environmental awareness and worldview changes if exposed to broader market dynamics, which would demand increased production volume and frequency to meet external market needs.

CONCLUSION

Based on the findings of this study, it can be concluded that the Matotonan community, which practices the *Bat Gette* agricultural system, is a pro-environmental or pro-ecological (NEP) society. Among the five ecological worldview categories measured in this study, the limits to growth category recorded the highest score. This particular worldview reflects that the Matotonan community demonstrates a high level of ecological intelligence in managing and regulating the carrying capacity of their environment.

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