



Literature study of the *Nyabuk Gunung* tradition in the communities on the slopes of Mount Sumbing as an effort to conserve agricultural land

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Received Date: 7 January 2024

Revised Date: 25 July 2024

Accepted Date: 29 July 2024

ABSTRACT

Background: Central Java has a variety of cultures and customs that are unique and interesting to learn. One is a farming system with uneven and sloping land for people living around the mountains. This article describes a farming system in Central Java society called *Nyabuk Gunung*, namely how to grow crops by making rice terraces formed according to contour lines. **Method:** The research method used in this research is qualitative descriptive, with data collection techniques of literature studies, field observations, and farmer interviews. A literature study is a method used to collect data or sources related to the topics raised in a study. **Findings:** The results of this study indicate that the surrounding community created the *Nyabuk Gunung* farming system in addition to utilizing existing land to prevent erosion and landslides on their land. **Conclusion:** Plants planted by the community in suitable plantation crops are located in the highlands, such as tea, coffee and other vegetable crops. **Novelty/Originality of this article:** The *Nyabuk Gunung* farming system can be a solution for agriculture in the Central Java region, which has mountainous topography as land conversion and prevents natural disasters such as landslides.

KEYWORDS: *Nyabuk Gunung*; mount sumbing; land conservation.

1. Introduction

Indonesia's environment is an ecosystem consisting of various subsystems, encompassing social, cultural, economic, and geographic aspects, each with unique characteristics. Such diversity requires environmental management and development grounded in the environment's carrying capacity and supportability, enhancing the harmony, compatibility, and balance of these subsystems, thereby strengthening their resilience. As of 2024, Indonesia comprises 38 provinces spanning from Sumatra to Papua, each province possessing its own diverse cultural traditions, local wisdom, and customs. One significant contribution from indigenous communities is the preservation of the local environment through traditional practices.

Traditional communities in Indonesia play a role in conservation through land management practices passed down through generations (Pawarti et al., 2012). This lifestyle, rooted in cultural, religious, and customary values, fosters local wisdom (Sufia et al., 2016). Centuries of experience have provided unique and specific insights into the reciprocal relationship between society and its environment (Salim, 2016). The interaction

Cite This Article:

Nabila, R. A., Surtikanti, H. K. (2024). Literature study of the *Nyabuk Gunung* tradition in the communities on the slopes of Mount Sumbing, Central Java as an effort to conserve agricultural land. *Holistic: Journal of Tropical Agriculture Sciences*, 2(1), 61-68. <https://doi.org/10.61511/hjtas.v2i1.2024.380>

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and adaptation between humans and their biophysical surroundings result in landscape units utilized to meet basic needs (Aulia et al., 2010).

The landscape serves as an ecological system governed by natural laws and a space for social group development (Bulu et al., 2017). Landscapes are valuable not only aesthetically but also ideologically. Each community has its own way of utilizing and managing landscapes based on land geomorphology, topography, ownership, vegetation characteristics, and the public mandate entrusted to them (Thamrin, 2013).

Given Indonesia's agrarian reputation, it is unsurprising that farming has historically been the main livelihood. Farmers' practices in land management naturally differ based on individual circumstances (Nirman, 2019). These differences align with the topographical conditions of each farmer's living environment. Humans are capable of adapting to their habitats. According to Santosa (2013), behavioral theory explains that behavior is influenced by various societal factors, including customs, beliefs, habits, education, occupation, region, land ownership status, income, culture, social strata, and information (Adnyani et al., 2014).

According to Kurnia (2018), local wisdom within communities can take various forms, such as values, norms, beliefs, and specific rules. The diversity of these forms results in different functions of local wisdom, including: (1) conservation and preservation of natural resources; (2) human resource development; (3) cultural and scientific development; and (4) guidance related to advice, beliefs, literature, and taboos. Additionally, Hidayat (2021) notes that the functions and meanings of local wisdom include: (1) conservation and preservation of natural resources; (2) human resource development; (3) cultural and scientific development; (4) guidance on advice, beliefs, literature, and taboos; (5) social significance; (6) ethics and morality; and (7) political significance.

One example of local wisdom in agricultural management is in Central Java, known as Nyabuk Gunung, which is essentially a terracing system (Maridi et al., 2015). This agricultural system is practiced by farmers to shorten the slope length and reduce surface runoff, allowing air to penetrate the soil (Prasetawati et al., 2010). This method helps to prevent erosion. Additionally, the stepped slopes create a beautiful landscape, often considered even more scenic than the terraces in Bali. A similar terracing system is practiced by the people of Majalengka Regency, called Terasering Panyaweuyan, located at the foot of Mount Ciremai, where vegetables are cultivated (Rohman, 2021). These terraces showcase a beautiful landscape and have become a natural tourism destination in Majalengka. This environmental preservation is closely tied to local community traditions, despite the absence of formal environmental education. Therefore, this article aims to describe the views and philosophy of the Central Java community on the environment through the terracing program known locally as Nyabuk Gunung.

2. Methods

2.1 *Tipe of research*

This type of research is librarian research (library research), namely a series of research related to library data collection methods or research whose research objects are examined through various library information (books, encyclopedias, scientific journals, newspapers, magazines and documents). Research using literature studies examines or critically reviews knowledge, ideas, or findings found in an academically oriented body of literature and its formulation of theoretical and methodological contributions on a particular topic (Muslim, 2018). Library research focuses on discovering various theories, laws, postulates, principles, or ideas used to analyze and solve formulated research questions. The nature of this research is descriptive analysis, namely the regular analysis of the data obtained, then providing understanding and explanation so that readers can understand it well (Anggraeni et al., 2019).

2.2 Data types

The data used in this research is secondary data. Secondary data is data obtained, not from direct observation. However, this data was obtained from the results of research conducted by previous researchers (Mardikantoro et al., 2016). Secondary data sources are essentially in the form of books and scientific reports of the primary or original content in the article or journal (print or non-print). According to Muali (2017), source selection is based on four aspects: origin, which considers the author's credibility and supporting evidence; objectivity, which assesses whether the author's perspective is beneficial or detrimental; persuasiveness, which evaluates the trustworthiness of the author; and contributive value, which determines whether the author's arguments are convincing and significantly contribute to other research.

The data collection method used in this research is the documentation method. The documentation method is a method of collecting data by searching or digging up data from literature related to what is contained in the problem formulation (Meliono et al., 2011). Existing data obtained from various literature is collected as one document used to answer the problems that have been formulated.

2.3 Data analysis

Data analysis is an effort to systematically search and organize data that has been collected to improve research understanding of the case, researched and studied as findings for others. The data analysis used in this research is bibliographic annotation analysis (annotated bibliography). Annotation means a simple conclusion from an article, book, journal, or other written source, while a bibliography is a list of sources on a topic. From these two definitions, bibliographic annotation is defined as a list of sources used in research, where for each source, a conclusion is given regarding what is written in it. Several things need to be considered in bibliographic annotation analysis, namely the identity of the source in question, the author's qualifications and objectives, simple conclusions regarding the content of the writing, and the usefulness or importance of the sources referred to in answering the problems that have been formulated.

Four procedures were used in this research. The four procedures are as follows: organize the literature to be studied. The literature studied is literature that is relevant or suitable to the problem. The stages in organizing literary works are looking for ideas, general aims, and conclusions by reading the abstract, several introductory paragraphs and conclusions, and grouping literary works based on specific categories. Synthesis involves combining the results of organizational literature into a summary so that it becomes a coherent whole by searching for related literature. Identification involves identifying controversial issues in literary works that are considered very important to be discussed or analyzed, making an article interesting to read. Finally, formulating involves formulating questions that require further research.

3. Results and Discussion

3.1. *Nyabuk Gunung tradition*

Human life is closely related to the land. In Indonesia, there is local wisdom in the *Nyabuk Gunung* tradition, which emphasizes the importance of protecting the land and reducing erosion for the future (Ashari, 2015). Mountains have a deep meaning in human culture, often becoming a spiritual meeting point between humans and the Creator. Mountains are also important in culture, such as mountains in *wayang*, which reflect the balance of nature, and *tumpeng*, which resemble mini mountains in various rituals (Mukti, 2010). The relationship between humans and mountains is respectful, where mountains are treated carefully to maintain their honour (Sartini, 2004).

According to the Official Wonosobo Regency Website, the topography of the Wonosobo Regency area has hilly and mountainous characteristics, located at an altitude of between 200 to 2,250 m above sea level, with these topographic conditions making the Wonosobo area prone to natural disasters, especially during the rainy season such as landslides (*landslides*), collapsing land movements, and creeping land movements (Wonosobo Regency, n.d). *Nyabuk Gunung Sumbing* (mountain belt in Mount Sumbing) is one of the community's efforts to preserve land in Butuh Village, Kalikajar District, Wonosobo Regency, Central Java. *Nyabuk Gunung* is local wisdom in agriculture, and it has various terms, namely *larikan*, *Kotakan*, *Banjaran*, *Ledokan*, *nggalengi*, and *bed* (Riantika, 2019).

The Nyabuk Gunung has a symbolic meaning, as it protects honour and ensures alertness and respect for the mountain as a symbol of the land. This tradition reflects a moral movement to maintain environmental integrity and prevent erosion and land degradation. Soil sagging from mountain slopes causes shame and loss of dignity. Therefore, *Nyabuk Gunnug* is an effort to maintain human honour as guardians of the earth and respect for the land (Riantika, 2019). This moral movement to respect the land is realized through technology. The mountain nyabuk culture is also known in West Java as *Ngais Gunung*, and in Bali, it is called *Songkran* (Siswadi, 2011). *Nyabuk Gunung* is a farming method that makes rice terraces that follow the contour lines of the land. This method is widely applied on the slopes of Mount Sumbing and Sindoro. It is a form of land conservation in agricultural practices because it follows the land's natural contours (Ayunda, 2024).

3.2. *Nyabuk Gunung* as an effort to conservation of agricultural land

Environmental conditions in Indonesia produce a diversity of ecosystems and natural resources, giving birth to Indonesian people attached to natural conditions and carrying out various activities to maintain their survival (Supriatin, 2012). Indonesian society views natural resources as teachers who provide guidelines for people's lives, which are born in the form of natural customs which are translated into living habits oriented towards the nature of nature, which develop according to its existence (*sunnahtullah*) and become valuable lessons from life, teachers in social life (Rahardiansyah et al., 2011). There is much local wisdom which to this day continues to be an example for the community, including on the island of Java, such as Pranoto Mongso, *Nyabuk Gunung*, which urges agricultural areas to be planted to prevent erosion and make swales follow contour lines (Kurnia, 2018).

Agricultural land is indeed the leading resource for farming communities, but its use requires a certain 'ecological wisdom'. Based on empirical experience, society's ecological wisdom will grow and develop (Kurnia, 2018). In the farming community in Central Java, for example, it is known as the *Nyabuk Gunung* agricultural system, or in the farming community in West Java it is known as "sand farming". Especially for rice fields, one of its functions is its ability to preserve water (water used in rice fields can be recycled naturally). Estimates of the water preserved are based on the existing water balance in the rice field system. Rice fields receive air through rain and irrigation; the water comes out through surface flow (runoff), evaporation and transpiration, and percolation. Some surface airflow and subsurface flow will reach rivers and sediments and can be reused for irrigation. Likewise, seeping water recharges groundwater, which can be reused for various purposes. The transfer of the function of rice fields causes a reduction in one of the environmental functions, namely, the function of preserving groundwater (Aslan, 2017).

Technology was born due to the increasing level and diversity of human activity, so technology will make human activity easier (Affandy et al., 2017). Terracing is a form of technology in the agricultural sector. Terracing or swales is a conservation method by making terracing which is done to reduce the length of the slope and retain air, thereby reducing the speed and magnitude of surface flow and increasing the opportunity for air absorption by the soil (Kartika et al., 2016). Terraces include flat terraces, ridge terraces, and bench terraces (Meliono et al., 2011). The terraces often developed on agricultural land in Indonesia are bench terraces, stair terraces, and gulad terraces (Kartika, 2016). Terraced

terraces are made on land with a 10 – 50% slope and aim to prevent soil layer loss (Moeis et al., 2022).

With terracing, it is hoped that farmers on mountain slopes will still be able to carry out their farming without fear of landslides and erosion because the farming model using terracing can reduce the rate of erosion and landslides (Setyaningrum et al., 2018). Terracing on sloping land shortens the slope's length and retains air, thereby reducing the speed and magnitude of surface flow and allowing air to be absorbed by the soil. Idjudin, To stop the erosion rate on sloping land, there is a need for terraced land conservation techniques, and to strengthen the terrace/contour, it is best to plant reinforcing plants in the form of grass, cattle fodder. Plants on the terrace function to hold soil particles. Due to erosion from the top of the array. So, it could be said that the local wisdom of *Nyabuk Gunung* is the same as that of terracing. However, the system called *Nyabuk Gunung* is considered more traditional in Javanese society because it has existed since time immemorial, long before society was introduced to the terracing system.

4. Conclusions

Indonesia has various local wisdoms that are characteristic of each region. One of them is the agricultural system in Central Java called *Nyabuk Gunung*. Mountain mosquitoes exist because of people's adaptation to the land topography in Central Java, which is uneven mainly because of the many mountains. *Nyabuk Gunung* is a way of farming that creates terraced land according to the mountain's contour. The term mountain *nyabuk* is rarely used and is better known as *reassuring*. Developments influenced the people in the times when people outside Java used the same system, namely terracing, so over time, the people of Central Java adopted the name.

Acknowledgement

The authors would like to express sincere gratitude to the reviewers for invaluable feedback and constructive suggestions, which have significantly enhanced the quality of this research.

Author Contribution

All authors equally contributed to the conceptualization, methodology, software, validation, analysis, investigation, data curation, writing, editing, and visualization of this study.

Funding

This research received no external funding.

Ethical Review Board Statement

Not available.

Informed Consent Statement

Not available.

Data Availability Statement

Not available.

Conflicts of Interest

The authors declare no conflict of interest.

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