THE RICE POSTHARVEST UTILIZATION CULTURE IN JAVANESE COMMUNITY OF INDONESIA:

Case Study in Klaten Regency of Central Java

July 2017

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Graduate School of Engineering
CHIBA UNIVERSITY

(千葉大学審査学位論文)

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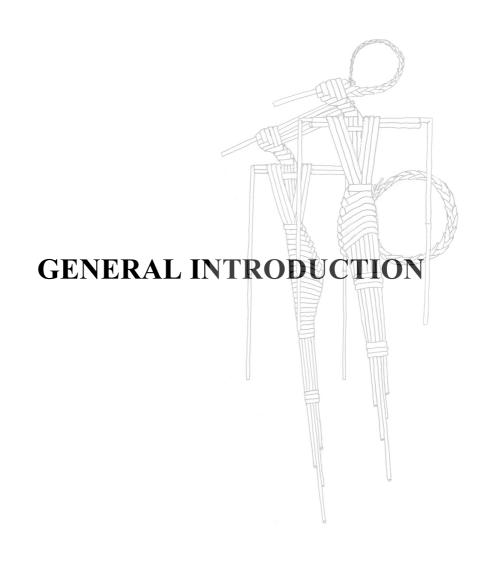
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1.0 GENERAL INTRODUCTION

1.1 PROBLEM STATEMENT

The country of Indonesia has 1128 ethnicities spread throughout its islands [1]. Within this diversity, each ethnic group has its own cultural characteristics. Based on Barth research, there are 2 implications when looking at ethnic groups as cultural units. The first implication is the classification of specific individuals or groups. The second implication is that cultural forms display influences of ecology [2]. Therefore, when an ethnic group lives in a varied ecological environment, the group will practice different behaviors depending on the characteristics of the area. The Javanese community is an ethnic who resides mostly in Central Java, East Java and Yogyakarta Special Region on the island of Java (see figure 1.01). The fertile soil conditions in the region, as the ecological



Figure 1.01: Javanese residence area (top), and pictures of Javanese traditional farmers (bottom) (source : Universiteit Leiden)

element of their culture, produces diversity in both agricultural products and the culture associated with farming activities. Rice as the staple food for the Javanese, forming rice farming as the main activity to sustain their primary needs. This dependence creates the identity of the culture of Javanese related to technical and mythical aspects related to rice plants, such as their belief in Dewi Sri as the goddess of rice and their traditional methods of farming with values behind this activity.

Through close association with the rice farming culture, the Javanese possibly had traditions of utilizing postharvest rice plant parts such as rice, rice straws, panicle stems, rice ears, rice husks and rice bran for daily life. Based on several historical evidence informs that Javanese utilize rice postharvest materials, such as old temple reliefs and notes of Chinese voyagers, the origins of Javanese culture in utilizing postharvest rice plants can be placed in the era of the Java Kingdom, which started around 700 AD. These historical objects described several instances of rice plant utilization for utility items, such as rice straw for thatched roofs and earthenware, and the utilization of rice for ritual offerings. Over time, the Javanese community continued to be affected by their utilizing of the postharvest rice plant.

Dutch colonization introduced new plants to Javanese farmers, such as corn, tobacco, soybean, and rosella for textile industrial needs. These new plants reduced the cultivation of rice. Dutch colonization also issued a regulation to avoid the use of thatched roofs to prevent disease, which decreased the use of rice straw [3]. After the era of colonization, in 1967, the Green Revolution initiated by the government also affected the culture of utilizing the postharvest rice plant [4]. This programmed was proposed by the president to reduce rice imports and to meet the needs of the population by multiplying rice production through new rice varieties and modern tools. This policy gradually shifted Javanese rice cultivation activities from culture-based to industrial-based. Therefore, traditional methods of cultivating rice plants, including the postharvest culture and cultivation of local varieties were gradually abandoned by the community.

As a result of the Green Revolution, the output of the postharvest rice plant was classified into two categories: (1) rice as the main commodity product and (2)

the non-rice parts as a waste materials which were later burned by farmers or absorbed in the industrial process. This differed from historical Javanese culture, which optimized all parts of the postharvest rice plant for daily life activities. This reality has changed the mindset of Javanese society, especially present society, to become unrecognized with their own culture and consider non-rice materials such as damen (rice straw) are a waste material, which has no potency to be utilized for their daily needs. Moreover, until present, there is no concrete reference and research related to the postharvest utilization culture in Javanese community. Therefore it is important to discover and analyze this culture, which has a close relationship and strong identity with Javanese as farmers community in the past.

Based on this aforementioned background, this thesis is hereby introduce as:

The Rice Postharvest Utilization Culture in Javanese Community of Indonesia (Case Study in Klaten Regency of Central Java)

This study is done to fill the gaps of research on postharvest rice in Indonesia which majority focusing on how to develop rice postharvest materials into commodity items such as: craft products, industrial materials (such as particle board), farming products (such as fertilizer) and food consumption supporting materials. This cultural design-based research also reveals the characteristics of Javanese rice postharvest artefacts to be the reference for design culture studies especially in rice culture fields.

1.2 SCOPE and LIMITATION

As the cultural group sample, there are several ethnicities that traditionally have a close relationship with rice farming activities in Indonesia, such as Javanese, Sundanese and Balinese. From these three ethnicities, Javanese had been chosen as the beginning of the rice postharvest utilization research. The Javanese, or the people of Java, can be defined by two criteria: culture and geography. Culturally, a Javanese individual is a person who was born or descended from Javanese ancestors who internalized Javanese culture such as language and tradition [5]. Geographically, the Javanese are known as the

community living in Central Java, East Java or Yogyakarta Special Region.

Klaten Regency, Central Java (Figure 1.02) was chosen as the sample for this research because of its historical background related to rice farming activities and abundant rice production. Klaten has been known as one of the "lumbung pari" or granaries in Java Island since the kingdom era. There are two reasons why the Klaten area abundantly produces rice. Firstly, Klaten is surrounded by approximately 134 springs that surface from the hillside of Mount Merapi, a volcano [6]. The volcanic ash that scatters from the volcano's eruptions produces fertile ground. Secondly, Klaten is in close proximity to two palaces, Yogyakarta and Surakarta. The Javanese believed that a king is a representation of god in the

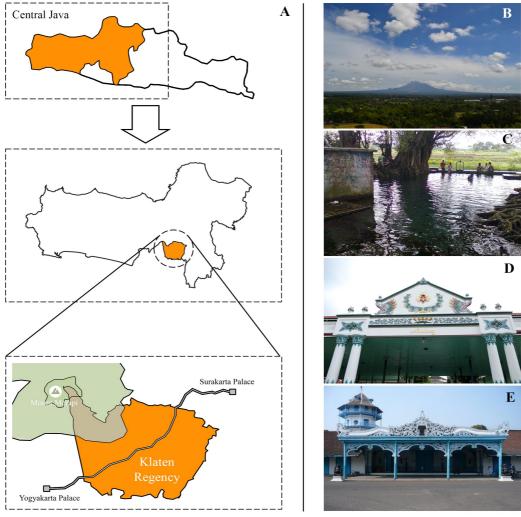


Figure 1.02: Location of Klaten Regency (A), Merapi mount (B), and Umbul *manten* or one of spring in Klaten area (C), Yogyakarta palace (D), and Surakarta Palace (E)

world and that a palace where a king resides is the centre of a sacred place. From this place, the Javanese believed that cosmic power from the king flows to his region of sovereignty and brings fertility to the region. This belief was an encouragement for the community who lived near the palace, including Klaten to continuously performed rice farming activities. These geographic conditions and its proximity to cultural centres position the Javanese in Klaten Regency as both productive in cultivating the rice plant and dutiful in practicing the values of the Javanese culture. In terms of cultivating different rice varieties, the Delanggu district in Klaten is renowned for having the most famous local rice variety in Indonesia, called *Rojolele*.

From the rice postharvest utilization culture aspect, in Klaten Regency until present there are still few of the traditional utilization could be seen performed by local community especially in ritual procession, such as: wiwitan or ritual before harvesting rice plant. This ritual has been very difficult to find recently because of the regeneration of farmers community from the senior farmers who born before the Green Revolution in 1970 (Figure 1.03) to the younger farmers community. Based on the senior farmers' experiences, besides for wiwitan ritual, there were more of rice postharvest parts utilized in various lines of daily life. Therefore it is urgent to perform research on this culture to avoid extinction of information and show to the young generation in Klaten area the importance of the rice postharvest utilization culture in Javanese traditional life.



Figure 1.03: Mbah Mangun, senior farmer in Klaten regency, utilizing rice ears for *wiwitan* ritual

1.3 OBJECTIVES

Outlined herein are the five chapters of this thesis. The theme of each chapter reflects each general objective of the thesis.

a) Chapter one

There are several objectives in introduction part this thesis. The first objective is to explain the origin of the traditional rice cultivation and postharvest utilization culture based on historical evidence. The second is to explain the characteristics of the Javanese identification system of the rice plant as well as the development of rice varieties within the community. The third is to explain the values and mythological elements of the Javanese belief system, which is at the heart of what motivates utilization of rice postharvest materials, are also revealed. The last part identifies the scheme of Javanese traditional rice cultivation and postharvest activities.

b) Chapter two

The objective of this chapter is to reveal how rice postharvest materials are used for utility needs. The analysis begins with a discussion of the origin of this culture based on research obtained from various sources of historical evidence. The chapter continues by outlining the utilization culture's forming process; discussion of this process reveals the reasons behind the utilization culture. New and old rice varieties are compared to explain the physical characteristics, both structure and dimension, that determined the rice straw utilization culture in the past. Through the data findings, the utility artefacts are classified based on their area of utilization. The area of utilization is later used to identify the production methods and values in utility items.

c) Chapter three

This chapter's objective is to discuss how rice postharvest materials were used for ritualistic needs. The use of rice postharvest materials for ritualistic needs dates back to the concept of the rice goddess in their culture and the utilization of rice plant parts for their rituals' processions. The chapter discusses the Javanese beliefs behind these rituals, as well as the kind of rice plant that was utilized in these rituals. As the second chapter discusses how postharvest rice plant were utilized in utility items, chapter three classifies the ritual items to reveal both the

production process characteristics and their value in rituals. The last part of this chapter reveals the characteristics of Javanese rice postharvest artefacts from both a utilitarian and ritual process standpoint on the basis of technical and values aspects.

d) Chapter four

The aim of this chapter is to examine the shift in the culture from the time before the Green Revolution to the post-Green Revolution era. It details the Green Revolution's impact on the practice of rice cultivation and postharvest utilization culture, from the initial cutting of the harvested rice plant to the processing of the unused parts. The solution for the present situation is also analysed as a means to re-introduce culture and reduce the rice straw burning activity.

e) Chapter five

The main objective of this chapter is to introduce the findings data related to the rice postharvest utilization culture to the community in Klaten regency through a workshop. The agricultural regeneration programme which resulted from the Green Revolution decreased the utilization of rice postharvest materials. Therefore the aim is to re-introduce the young generation in Klaten regency to their rice postharvest utilization culture through a presentation of finding artefacts which have been found and through a practice of creating traditional artefacts which continue the traditional based rice straw design development. As future plan, the next project is also proposed to create a center of preservation and development of rice postharvest culture in Klaten regency.

1.4 METHODOLOGY

This thesis is divided into three basic frameworks: the discovery and analysis of the rice postharvest utilization culture; the declining of the utilization culture; and the effort to re-introduce the findings artefacts to the local community. These three frameworks were accomplished primarily by : reference studies and a field survey.

a) The discovery and analysis of the rice postharvest utilization culture

This thesis's framework is divided into three chapters which consist of chapter one, two and three. These chapters are focusing on the discovery of the origin of rice cultivation and postharvest culture, postharvest activities, the utilization culture forming process, finding artefacts, production processes, and values both in utility and ritual items. The Javanese rice cultivation and postharvest cultures are introduced via the identification of its origin. The data is collected mainly from discussion with archaeologists in Yogyakarta Archaeological Center and Borobudur Conservation Center. The authors seek to outline the relation between the postharvest activities and the rice postharvest utilization phase. To obtain the research data, the authors conducted field research as their primary methodology by interviewing senior farmers and *tetua desa*, or village elders, in Delanggu village, Klaten regency.

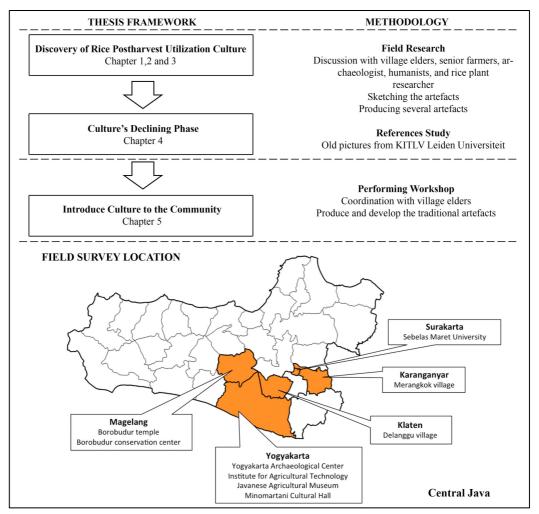


Figure 1.04: Thesis framework, methodology and survey location

In the phase of the discovery of the artefacts in utility needs, the majority of the data was obtained from discussion with the local community, which consists of *tetua desa* and senior farmers in Delanggu village, Klaten regency and Merangkok village, Karanganyar regency, who experienced the era before the Green Revolution. To visualize and analyse the production process, the author sketched the now extinct artefacts based on given clues and confirmations of their shapes. The reconstruction of several extinct artefacts was also accomplished by senior farmers to experience and understand the production process of rice postharvest artefacts. Several of the artefacts were also discovered through screening the old photos taken in the Dutch colonization era. The photos are collected at the KITLV Digital Media Library, Universiteit Leiden. The photos that indicate the rice postharvest utilization were later confirmed with village elders and senior farmers. After the artefacts' finding process, the production methods and values aspects were analysed to understand the characteristics of the Javanese rice postharvest utility artefacts. For values analysis, the authors visited tetua desa, humanists in Balai Budaya Minomartani and Javanology (Javanese culture science) professors in Sebelas Maret University. Additionally, technical analysis such as laboratory tests was also conducted to understand the comparison between local (old) and superior (new) varieties in terms of dimension and structure quality, which from these technical aspects are important for the utilization phase. The analysis related to the dimension was performed at the Institute of Agricultural Technology, while structure tests were performed at Sebelas Maret University.

For the discovery of the artefacts used in ritual processions, the methodology is similar to the findings of utility items. To explore the idea of ritual processions that still adhere to the cultural customs, the utilization activities was analysed and the shapes of artefacts were visualized through sketches or reconstructions provided by *tetua desa*, who are believed to make important decisions in organizing rituals (such as determining the time, person in charge and procedures of ritual processions) and lead ceremonies. Later artefact values and production process rules such as the quality of raw materials, the time of production, the act of utilization and the person who produced the artefacts were analysed through discussion with *tetua desa*, humanists, and Javanology professors.

b) The declining of the utilization culture

This part analyses the shift from the traditional post harvest scheme to the

modern, post-Green Revolution scheme and how this shift has impacted the utilization culture within communities. The data was obtained from the study of references related to the Green Revolution program and from discussion with *tetua desa* and senior farmers who experienced the transition from the era when Javanese still practiced the rice postharvest utilization culture until the present.

c) The effort to re-introduce the findings artefact to local community

With the declining of the rice postharvest utilization culture, it is important to introduce the findings data to the community in Klaten. The workshop approach was chosen as one of the methodologies to introduce this culture to the Javanese, especially to the young generation. This workshop was performed by assigning village elders or *tetua desa* as teachers whose job was to spread the knowledge of both the rice postharvest activities and utilization culture. The high school students as the participants were also encouraged to develop the rice postharvest artefacts based on the traditional methods. For future project, the site plan of base camp location and details of realization both activities and implementers also planned by the consideration of preservation and development of rice postharvest culture.

3. ORGANIZATION of the THESIS

This thesis is started from this general introduction as the research background with the explanation of problem statement, scope and limitation, objective, methodology, and organization of thesis. It continues with the contents of the thesis which the flow is following the methodology above mentioned with 5 chapters as follows:

- Chapter 1 The Javanese Traditional Culture of Rice Cultivation and Postharvest Activities
- Chapter 2 Rice Postharvest Utilization in Utility Needs
- Chapter 3 Rice Postharvest Utilization in Ritual Processions
- Chapter 4 Post Green Revolution Rice Cultivation and Postharvest Scheme
- Chapter 5 Workshop of Javanese Rice Postharvest Utilization Culture
- Chapter 6 Conclusion

As the publication of the bulletin of JSSD (Japanese Society for the Science of Design), chapter 2 was submitted as the part one of the publications entitled "The Culture of Postharvest Rice Plant Utilization for Utility Purposes in Javanese Community". The chapter 3 which focusing on ritual utilization was submitted for the part two of the publication entitled "The Culture of Postharvest Rice Plant Utilization in Javanese Community Ritual Procession". Chapter 4 was submitted to one paper (as part three) entitled "The Rice Postharvest Utilization Scheme Between Traditional and Post-Green Revolution Era in Javanese Community". For the chapter 5 or workshop part, the paper was submitted as the last part of the publication entitled "The Development of Rice Straw Artefacts Through Workshop in Klaten Regency of Central Java".

Notes

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Chapter 1: THE JAVANESE TRADITIONAL CULTURE OF RICE CULTIVATION AND POSTHARVEST ACTIVITIES

CHAPTER 1: The JAVANESE TRADITIONAL CULTURE of RICE CULTIVATION and POSTHARVEST ACTIVITIES

1.1 The ORIGIN of JAVA

From its primeval name, the meaning of the word Java is very close to 'rice plant.' According to Canggal inscription (created in 732 AD) (Figure 1.1) Yāwadwīpa or Yāwa is the abbreviated form of the word Jawawut, which is a type of small grain cereal that was first discovered by the earliest inhabitants of the island of Java. The rest of the word, dwipa, means 'island' [1]. Many local people still associate the definition of Jawawut with the rice plant, which has been a vital staple throughout Javanese history. Java has 121 active volcanoes, and the volcanic ash produces fertile lands. Great rivers such as Serayu, Bengawan Solo (Figure 1.1) and Brantas are sources of water for farmers and bring fertile volcanic materials into the lowlands [2]. With such geographical conditions, the Javanese evolved into an agricultural community. Rice, the most widely cultivated crop, became the largest agricultural commodity. Other islands, such as Sumatera, Malacca, Borneo, Sulawesi and Maluku became dependent on harvests from Java [1]. The Javanese is an agricultural society. Its close relationship with rice cultivation cultures formed its unique community structures. For example, in the



Figure 1.1: Canggal inscription (collection of National Museum of Indonesia, Jakarta) (Left) and painting of Bengawan Solo river during colonial period (collection of National Museum of World Cultures) (Right)

18th century, the wealth of a province in Java depended on the soil's fertility, irrigation systems and the water buffalo populations. Likewise, the income of a Java kingdom was not calculated based on how much money it had, but how much rice could be collected there [1].

1.2 The ORIGIN of RICE CULTIVATION and POSTHARVEST CULTURE in JAVANESE SOCIETY

Based on the explanation from Nadirman Haska, the independent experts of Biotechnology and Agrotechnology, the origin of staple food in Javanese community was sago, not rice. Historians claim that the rice plant originated from India or China. The propagation of rice plants to southern India likely started in Malaysia. In 1500 BC, nomads from this region brought the rice plant to Indonesia, including Java [3]. The culture of rice cultivation was introduced by Austronesian peoples who originated from southern China and migrated to Indonesia through Indochina, Siam, and Malaka, eventually spreading to Sumatera, Java, and Sulawesi [4]. The irrigation system was introduced by ancient migrants of the Dong-Son civilization from North Vietnam (300 BC) who settled in the Kediri area in East Java [5]. Later, the rice cultivation culture drastically increased after the establishment of large kingdoms in Java.



Figure 1.2: The 7000 years old skeleton of early Austronesian individual founded in Punung District, Pacitan Regency, East Java (Left) and Austronesian boat replica (Right), both displayed in Sangiran Museum Karanganyar District, Central Java, Indonesia

Related to the origin of Javanese postharvest rice cultivation culture, the visual examples of postharvest culture in several ancient temple reliefs from Central Java could be the evident (Figure 1.3). The reliefs depict Javanese people cutting harvest rice plants with *ani-ani* or traditional *wuli* (rice ear) cutting tools [6]. Borobudur temple reliefs depict the traditional distribution method of using a stick (built in 770 AD); and a relief from a Vishnu temple (built in 850 AD) illustrates the Javanese using *lumpang* and *alu* as tools to pound and separate *beras* (rice) from straw to process harvest rice [7].



Figure 1.3: Relief of cutting rice harvest using *ani-ani* (A), traditional method of rice distribution (B), and pounding rice activity using *lumpang* and *alu* (C)

1.3 RICE PLANT in JAVANESE COMMUNITY

Based on Claude Levi Strauss's theory, the native gives names and forms concepts solely in accordance with their needs through the intimate contact between human and their surrounding environment [8]. Through their close association with rice plant, Javanese as one of the native society in the Java island classified rice plant parts mostly after the harvest activities, because in this phase they start to utilized the rice plant parts for their daily needs. The rice varieties that they plant also developed along with a wide range of external influences, from planting local variety to superior variety or new variety.

1.3.1 Rice Plant Identification in Javanese Community

Related to the Javanese identification system in rice plant anatomy, the naming of plant parts mostly appears in the postharvest process. *Pari/pantun* is the Javanese name for the rice plant, which consists of *dami* (rice stem) and *lamen*

(the leaf). The rice plant harvested using *ani-ani*, or the traditional tool for harvesting, is *wuli* (rice ear). The part of the plant from the root up to the lower part of the stem is *damen* (rice straw). The *wuli* contains the *gabah* (unhulled rice), which consists of different parts after it is processed into rice. These include *mrambut* (husk), *dedak* (broken husk), *bekatul* (bran), *beras* (rice), *tugelan* (broken rice) and *menir* (the smallest broken rice). After *wuli* is separated from *gabah*, the discarded panicle stem is called *merang*. At the plant's bottom, after the second cutting process which uses a sickle called *ngepok* (clearing up the base of the stem), the remaining roots are *bonggol*, and then the cleared stem is *damen* (rice straw) (Figure 1.4).

1.3.2 Development of Rice Varieties in Java

In Java, there are essentially two varieties of rice: the first is Javanica, or the local variety; the second is Indica, or the superior variety. Javanica rice plants are usually harvested twice a year, but during the colonial era and technological revolution, farmers were pressured to produce a new variety of rice that could be harvested more frequently. This development began during the Dutch occupation in 1905 by establishing an agriculture department, the Rice Research Institute (Proefstation voor rijst en tweede gewassen), in Bogor, West Java. This unit was designed to develop rice plants through the use of germplasm diversity [3]. During the period of Japanese occupation (1942-1945), the government wanted to increase Javanese rice production, so they recommended that farmers plant pari cere or Indica rather than Javanica. To do this, the Japanese government introduced the Indica rice plant Hourai, which originated in Japan and was later blended with Taiwan local rice [9]. During the Green Revolution, after IR5 and IR8 (Indica) was released in 1967, superior varieties of rice gradually increased. The government strongly recommended that farmers use the superior variety of rice, which has a relatively short planting process and is resistant to plant hopper; therefore, local rice production greatly decreased.

The Javanese plant two main local varieties of rice plants: *Rojolele* and *Mentik* (local white rice). Javanese also occasionally planted other local varieties, such as *Cempo Ireng* (local black rice) and RI (red and white rice). *Cempo Ireng*

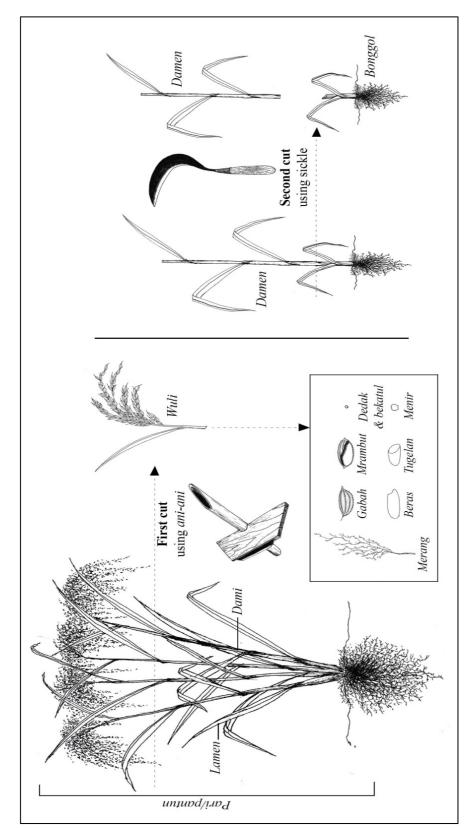


Figure 1.4: Javanese identification and naming of rice plant parts

was classified as forbidden rice; it could be consumed only by the Javanese royal family [10]. RI is an old local variety recently discovered in a temple in the Klaten area, believed to have been used ritualistically because white and red symbolize fertility. All of these local varieties are rice plants, which have adapted to specific agro-ecosystems and produced structure and dimension characteristics that support the utilization of non-*beras* materials. In terms of the superior variety of rice plant, researchers developed new varieties based on soil, climate, temperature and taste, without considering non-*beras* utilization of, for example, *damen* (rice straw) and *merang* (panicle stem).

1.4 JAVANESE BELIEF

Javanese life traditionally practices the triangle belief in microcosmic, macrocosmic and meta-cosmic in their daily life. This belief also implemented in rice postharvest activities, which in meta-cosmic terms, they believe the figure of Dewi Sri as the goddess of rice.

1.4.1 The Javanese Macrocosmic, Microcosmic and Meta Cosmic Belief

The Javanese believe that human life is located between two cosmos: the macrocosmic (*jagad gede*) or universe and the microcosmic (*jagad cilik*) or human world. Behind these elements, there is a transcendent field, namely the meta cosmic (*jagad ghoib*) or supernatural world (Figure 1.5). The meta cosmic is the element that maintains the existence of the microcosmic and macrocosmic. Humans as living beings are also responsible for maintaining these two elements harmoniously. Influenced by these microcosmic and macrocosmic beliefs, the Javanese formed their life philosophy as an attitude that shaped their cultural personalities [11].

Under the microcosmic element, there are two philosophies of life. The first philosophy is a social value called *memayu hayuning bebrayan*, which literally means "to beautify the behaviors in human relationships." The Javanese practice the principle of *gotong royong* (mutual cooperation) or *kekadangan* (kinship) in keeping with this term. The second philosophy is an individual value called *memayu hayuning pribadi*, which means physical and emotional personal self-

perfection. In the macrocosmic element, there is an environmental philosophy called *memayu hayuning bawono*, which literally means "to beautify the world." This involves the practice of maintaining, protecting and improving one's physical and spiritual environment. It also directs the Javanese to continually improve the quality of life and the ecosystem of the earth and the universe.

Both the social and individual values that emerge from the Javanese microcosmic philosophy of life basically constitute a necessary condition for supporting the environmental value of *memayu hayuning bawono*. On the other hand, meta cosmic realm is the transcendental power which humans intuitively depend on for existence. From this field, the mythology of Dewi Sri, or the goddess of rice, emerged through syncretism between Javanese animism with Hinduism (Figure 1.5).

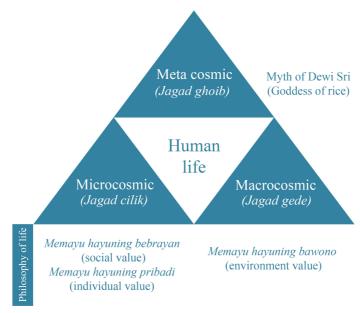


Figure 1.5: The triangle of Javanese life values

1.4.2 Dewi Sri in Rice Postharvest Culture

Dewi Sri, the Javanese mythological goddess, was born from the assimilation between Javanese animism and Hinduism traditions of deity worship [12]. Dewi Sri is believed to be the highest and most important goddess in the Javanese farming community. In agricultural areas, Javanese believe that Dewi Sri is the goddess not only of rice, but also of fertility, and she is the protector of their rice fields. In rice cultivation schemes, the closeness between the Javanese and Dewi

Sri is evidenced in rice field ploughing practices, planting young rice, harvesting until the rituals of storing harvested rice in their house. In the traditional and popular performing art form *wayang kulit*—Javanese shadow puppetry—the figure of Dewi Sri is a major character (Figure 1.6). One story is entitled *Sri mulih*, which literally means "Sri comes home" in *bersih desa* (a ritual after the completion of harvesting rice). Her presence in *wayang kulit* performance represents the close relationship between Dewi Sri with Javanese folk entertainment.

In terms of rice utilization and the Javanese motivation to use postharvest materials for utility purposes, the Javanese believe that rice crops are deposited by Dewi Sri to provide strength (foods), hygiene (tools for cleaning houses and the body using panicle stem), protection (thatched roofs made from rice straw), and many other daily needs. In terms of ritual utilization, Javanese borrow the characteristics of Dewi Sri while using rice plant parts in their religious offerings. They also create artefacts with rice plant to present the figure of Dewi Sri inside their homes.



Figure 1.6: Figure Dewi Sri in Javanese as shadow puppet

1.5 RICE CULTIVATION CALENDAR SYSTEM

Pranata Mangsa is the traditional Javanese calendar for planting rice, used

since the Kingdom of Medang in the 9th century Hindu era [13]. Based on this calendar, Javanese harvesting time was highly dependent on rain, so the Javanese often planted wetland rice once a year followed by *pari gogo*, dryland rice, and *palawija*, or other crops. Water storages, dams and aqueducts were built during the Dutch occupation (1800-1942), creating farming infrastructures that did not depend on rain, allowing Javanese farmers to harvest two or three times a year. Klaten District's close proximity to springs and rivers brought water to rice fields, so harvest time was divided into two periods: *panen gadu*, dry season harvest; and *panen rendengan*, rainy season harvest. Based on these conditions, the Javanese living in the Klaten area had two postharvest activities each year when the rice postharvest materials could be obtained for daily needs.

1.6. JAVANESE RICE CULTIVATION SCHEME

In traditional rice plant cultivation, hereditary Javanese farmers practiced a method that essentially consisted of a preparation phase, planting phase, treatment phase, and pre-harvesting phase (Figure 1.7). In the preparation phase, the rice field rested after harvest time, and the process of cultivation began with rice nurseries. This process continued with the *slametan* ritual, a ploughing activity using luku or cangkul (hoe), preparing irrigation channels and irrigating rice fields. Later, digaru was performed, which involved levelling the soil using forkshaped tools called garu and sorok. The last step was nyajeni, a ritual that requested the protection of Dewi Sri during cultivation. The planting phase followed, which was executed only by women who moved young rice plants from pinian (seedbeds) to rice fields. The treatment phase involved repelling pests and diwatun, or pulling grass. The pre-harvest phase included performing wiwitan, or rituals of gratitude, to Dewi Sri. Farmers selected the best wuli and tied it into bundles, then the leaf located in wuli was dikepang, or braided, so that its shape resembled a woman's hair as a reflection of the goddess Dewi Sri. After finishing this ritual, harvesting began [14].

After the Green Revolution, the goals of which were efficiency, quantity, and production, rice cultivation simplified traditional patterns by replacing traditional tools with agricultural machinery tools; the *luku*, for example, was replaced with

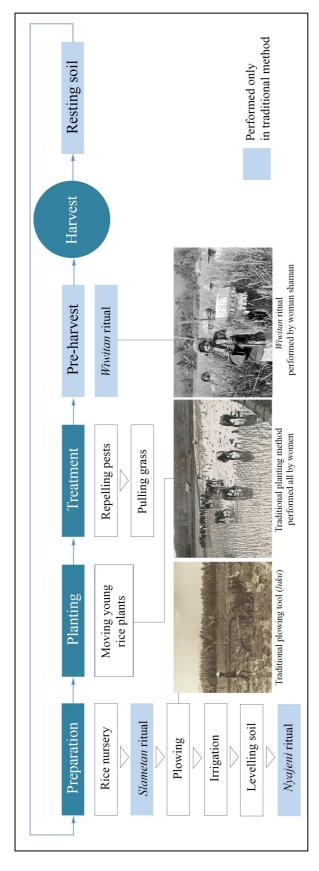


Figure 1.7: Javanese rice cultivation scheme

the tractor, and three days of work became one, saving manpower and expenses. The new cultivation methods required farmers to think about cultivation more practically, by, for example, omitting rituals during the preparation and preharvest stages (Figure 1.7). Harvest ritualism expressed reverence for Dewi Sri and allowed only women to participate in the planting stage; the community no longer follows this rule, but among older generations of farmers, these rituals and rules are still performed amid modernization. The new cultivation model increases annual production outputs, and after harvest time, the process prepares for next season without rest. This pattern differs from traditional farming, which considers soil a living being that needs rest. In terms of resting soil, it tooks around one until one and a half month before starting new planting season. Therefore to filling this spare time, one of the Javanese activities was producing rice postharvest artefacts to create new or replace the artefacts.

1.7 TRADITIONAL POSTHARVEST SCHEME

In terms of postharvest rice plant activities, the post-Green Revolution movement scheme differed from the traditional Javanese postharvest scheme. Traditionally, the postharvest scheme involved using all parts of the postharvest rice plant for daily life. This model was divided into five supporting steps: harvest

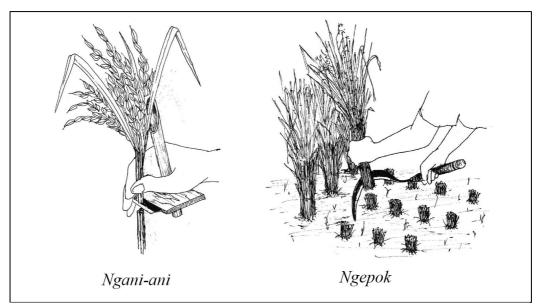


Figure 1.8: Traditional rice harvest cutting methods

cutting, distribution, storage, processing into beras, and processing the unused

parts.

1.7.1 Harvest Cutting Method

During harvest time, Javanese farmers cut the local varieties of rice plant twice (Figure 1.8). The first cut occurred during *ngani-ani*, or the process of cutting *wuli* from the bottom part of the first leaf using *ani-ani* tools. The first step of the *ngani-ani* process was called *nggrontongi*, or choosing the best harvests for the next planting of seeds. A group of women then harvested the rice using *ani-ani* (about 200-500 female workers covered each hectare of rice field). After the *ngani-ani* process came *ngepok*, or clearing the base of the stem. This method took into account the plant's use in many daily needs; it therefore produced *damen* with tall dimensions [14].

1.7.2 Distribution Methods

Damen and wuli were obtained and distributed from the postharvest cutting process mentioned above. After the ngepok process, damen was stacked in the rice field using circular and conical shape patterns. For residential needs, damen was distributed by diangkut (which used pulled wagons) for large quantities and disunggi (placed on the head), dipikul (on shoulder), or digendong (picked up) for small quantities (Figure 1.9). One bundle of damen had a diameter between 60 and 75 centimetres. Javanese social beliefs were displayed when farmers distributed damen to those in need with no expectation of any repayment [14]. Following the *ngani-ani* process, distribution of *wuli* began by creating *untingan* (tying by placing the collected wuli into a circle the size of thumb and index finger), which were placed in gubuk panen (harvest huts). Ties from bundles of harvested rice were then fixed, merged into prentilan (three to four untingan merged into one bundle with the size of a circle made by both hands' forefingers and thumbs), dried under the sunlight in two days by reversing *prentilan* position every midday on each day (Figure 1.9), and prepared by stacking the dried prentilan for distribution. Merged bundles (prentilan) were usually distributed by dipikul, which used pikulan (a shouldered stick) for small quantities and diangkut for large quantities (Figure 1.9). Because of their close relationship with Dewi Sri, wuli distribution was conducted by women from several villages by means of picking up (digendong) using tenggok (Figure 1.9), bamboo containers [14].

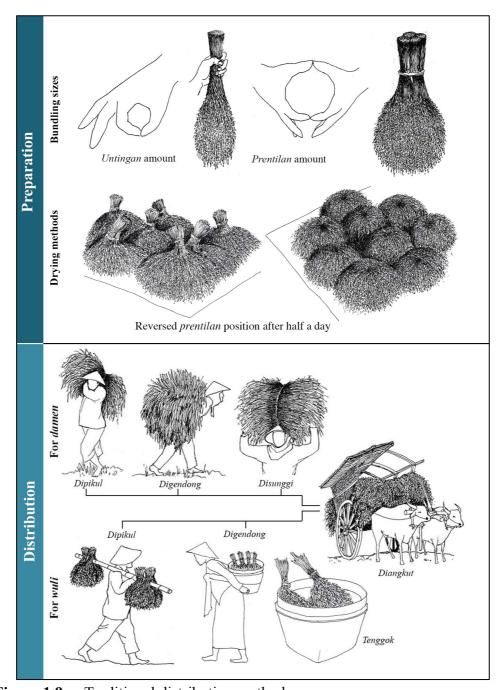


Figure 1.9: Traditional distribution methods

1.7.3 Storing Methods

In homes after the distribution process, *damen* was placed inside *damen* storage areas called *njlangkringan*, usually located on the right side of house (Figure 1.11) and designed with a floor higher than ground level to protect *damen* from rain, water, and humidity. The *wuli* part of the plant, was stored in *lumbung*

pari, or granaries (Figure 1.11). These were usually found in *limasan* houses, which were owned by middle-class families. For lower class families, the storing place was located inside *senthong tengen* (Figure 1.10 & Figure 1.11), a room located on the right side of a house and used for stacking *wuli* and storing farming tools in *kampung* houses [14].

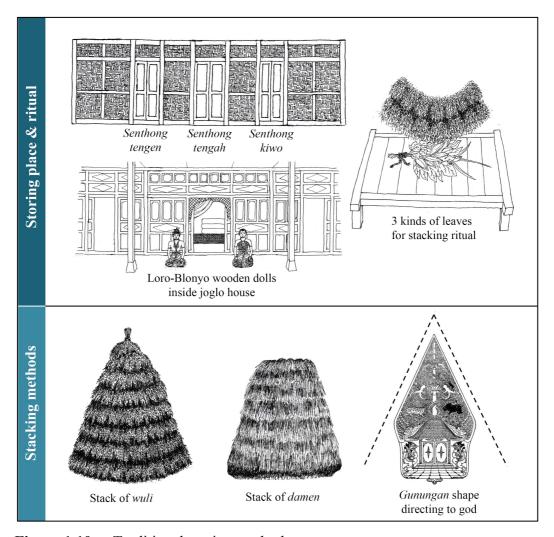


Figure 1.10: Traditional storing methods

Before storing the *wuli*, Javanese performed two rituals: one done in rice fields after *wiwitan*, and one performed before stacking. In the rice field ritual after *wiwitan*, the braided *wuli* were picked up using *jarik* (traditional fabrics belonging to the rice field owner), preferably by women. During the trip from rice fields to the house, the person carrying the braided *wuli*, or "Dewi Sri," had to concentrate fully and abstain from speaking until the ritual was complete [14].

Therefore, in several areas, this ritual was performed before dawn to avoid crowds. In some villages, *wiwitan* was performed in the evening and continued during harvest time the next day. Children usually participated in this ritual by watching in *galengan*, or paddy dike, and eating together.

Inside the house, "Dewi Sri" was placed inside the senthong tengah (the sacred or praying room) (Figure 1.10 & Figure 1.11). The Javanese believed that this room was a layover place for Dewi Sri, who would bring blessings and fertility into their lives. For those who had granaries outside their houses, they hung the "Dewi Sri" over the door inside the granary (Figure 1.11). They then tied two bundles of wuli in front of senthong tengah (granary door), called Sri-Sadhono, a representation of Dewi Sri and Raden Sadhono (pair of Dewi Sri) which symbolized permission before harvesting their "child." In upper class joglo houses, Javanese place wooden dolls carved as a Javanese couple (Loro-Blonyo) (Figure 1.10) in front of senthong tengah (usually called petanen) as their Sri-Sadhono representation. On the following day or harvesting day, the ritual continued inside the senthong tengen for kampung houses or granary for limasan houses (Figure 1.11) by stacking three kinds of leaves into a bundle, each with a specific value related to prosperity and protection (Figure 1.10). Kluwih (breadnut) leaves signified the desire for gods to continue providing ample amounts of rice until the next harvest. Pulutan (urena lobata) leaves represented abundance of sustenance, and keduk ireng (palm leaf midrib fiber) is used to scare away evil. After this ritual, the wuli were "allowed" to be stacked with the conical shape pattern. The Javanese believed that the conical shape directed to the sky symbolized a communication with gods who resided there [11]. This concept was taken from gunungan, a shadow puppet character with a mountain shape (Figure 1.10) pointing to the skies. In terms of design, this traditional stacking pattern allowed grains to avoid moisture by placing the wuli's stalk inside the stacking cone and grains on the outer side.

1.7.4 Processing into Beras

At *emper* (front yards) (Figure 1.11), every five or six days, Javanese women helped each other process *wuli* into *beras* by putting *prentilan* (the larger bundler)

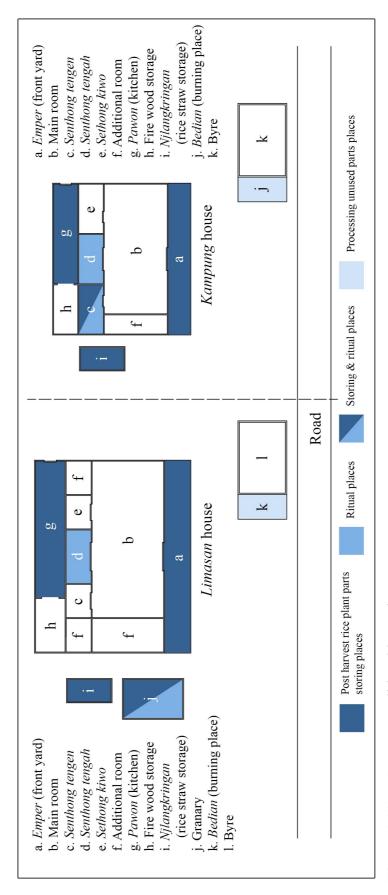


Figure 1.11: Javanese traditional house layout

of *wuli* into *lesung* (a boat-shaped tool) and beating it using *alu* (wooden stick) (Figure 1.12). Later, *mrambut* (rice husk) was inserted into gunny sacks, and *merang* remained in the *prentilan* bundle condition and were placed in *pawon* (traditional kitchens) (Figure 1.11) as a cooking stock and material for bathing and creating brooms and other daily tools. *Gabah* (unhulled rice) would be processed into *beras*.

For beras processing, after the lesung process, the gabah was diseloh (ground) by lumpang (a pot-shaped tool made from wood or stone) until the bran fell apart (Figure 1.12). This continued with ditapeni, or filtering beras from menir (smaller beras), tugelan (broken beras) and gravel with a circular throwing movement using nyiru (Figure 1.12), a cylindrical shaped tool made from bamboo. Later, the process continued with ngiteri, or an encircling movement, using nyiru to separate beras and gabah. The remaining gabah were processed using the lesung process and then repeated. Beras was inserted into gentong beras (rice pots made from clay) and placed in pawon (Javanese traditional kitchens) (Figure 1.11). The remaining materials from the beras processing, such as bekatul (rice bran), dedak (broken husk), tugelan and menir (broken beras), were inserted into gunny sacks and placed inside kitchens, lesung or emper (front yards) (Figure 1.11) [11]. For producing rice postharvest artefacts, most of the processes were performed at emper because in this place was exposed to the sunlight compared to inside

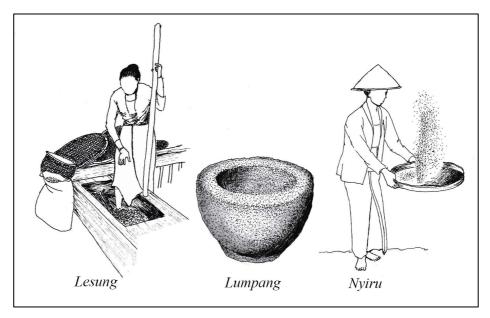


Figure 1.12: Traditional processing into *beras* methods

Javanese traditional house, which was no lights available. *Emper* was also a gathering place with neighbors, therefore it became a place for performing the community relation values related to the production process of rice postharvest artefacts.

1.7.5 Processing Unused Postharvest Rice Plant Parts

After harvest time, *damen* was stacked in the rice field area and later taken by the surrounding community. The remaining *damen*, which was physically broken and very short, was called *awul-awul* (Figure 1.13). This *damen* would later be burned in rice field areas or used as *emposan*, which is *damen* that has been mixed with sulphur to be burned for repelling rats. In residential areas, the remaining postharvest rice plant parts were later used for animal feed or burning at *bedian* (a space for burning *damen* that was located beside the byre) (Figure 1.11). The dust from burned straw at *bedian* was used for repelling mosquitoes from the byre and



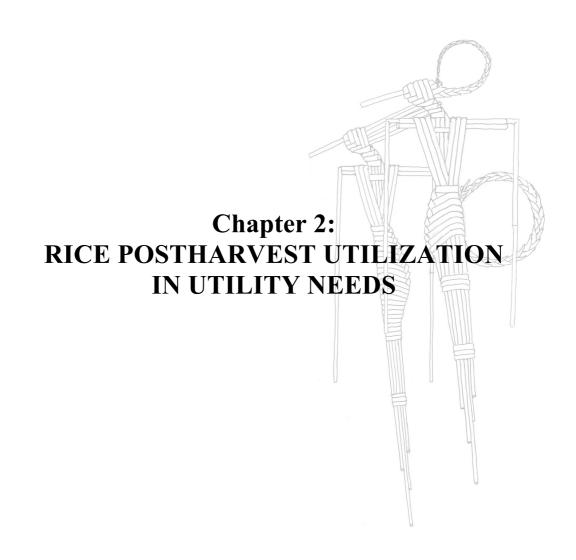
Figure 1.13: Farmer carrying awul-awul on her head

house perimeters [11].

Notes

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- 11) Based on oral interviews with *tetua desa* at Klaten area, September 2015.
- 12) Sumintarsih. *Dewi Sri Dalam Tradisi Jawa*. Jantra Vol. II, No.3, June 2007.
- 13) Daldjoeni N. *Pranatamangsa, the Javanese Traditional Calendar*. The Environmentalist 4: 15-18, 1984.
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CHAPTER 2: RICE POSTHARVEST UTILIZATION in UTILITY NEEDS

2.1 The ORIGIN of the UTILIZATION for UTILITY ITEMS

Based on sources such as reliefs, art works, inscriptions, temples, historical notes of Chinese voyagers and old Javanese poems (*kakawin*), some information about the origin of the culture of utilizing the postharvest rice plant for ritual items in Javanese community can be obtained. Hired to serve as a partner of a renowned archaeologist, W.F. Stutterheim, Walter Spies or painter that had made contribution for modern visual art in Bali created the painting entitled "*Kehidupan di Borobudur*" or daily life around Borobudur temple which was completed in October 1930 (Figure 2.1, A). This painting was collected by the former president Sukarno in middle of the 1950 and shows the possibility of *damen* utilization as the roof materials for Javanese house and gate in the era of Borobudur. Based on Chinese voyagers notes, ordinary Javanese people's houses in the Majapahit Kingdom era (1293-1500 AD) also used thatched roofs. Another utilization in the Majapahit era was to create red bricks, which were made of clay and rice husk.



Figure 2.1: Postharvest rice plant utilization for utility items based on historical building, temple reliefs and old poem

Such bricks were used to build a temple and the wall of the king's residence (Figure 2.1, B). At the Borobudur temple (built 770 AD), several bas-reliefs also show information related to postharvest rice plant utilization. For example, the craftsmen were producing pottery by burning the pottery inside a stack of rice straw for the hardening process (Figure 2.1, C). The Karmawibangga relief, also at the Borobudur temple, shows the method Javanese farmers used to burn *emposan*, rice straw mixed with sulphur, to repel rats from the fields (Figure 2.1, D). The traditional method of cooking rice in Java used panicle stems and wood, as illustrated in the Cabean Kunti temple (Figure 2.1, E). Another conclusion about the origin of the Javanese rice straw utilization culture comes from Kakawin Ramayana, an old Javanese rendering of the Sanskrit Ramayana poem (*kakawin*) written in approximately 870 AD (Figure 2.1, F). In this old poem written in Sanskrit (old Javanese) language '*daluwan wedihanya*' or the utilization of rice straw into clothes [1].

2.2 The POSTHARVEST UTILIZATION CULTURE FORMING PROCESS

Through the influence of Austronesians and Dong-Son Culture, the Javanese community cultivated the rice plant as a staple food. This was supported by the fertile soil in Java, forming the Javanese into a community of rice farmers, which was in contrast to other ethnic groups in Indonesia such as Bugis and Melayu; both of these groups were seafarers. As a traditional farmers' community, Javanese tended to live permanently in a group in a village with 50-200 people. They would help each other to meet their needs for food, clothing, home and craft. They communally started to build permanent houses, cultivate rice plants and produce crafts. From the activities above mentioned, inside these communities, formed strong relation activities between the rice field and the home. The Javanese began to utilize postharvest rice plant parts as one of the abundant materials around them into artefacts to support the activities of these two areas through the identification of materials' characteristics (Figure 2.2). In identifying postharvest rice plant parts, Javanese classified the materials by several characteristics later used to determine appropriate utilization. For instance, from

their perspective, rice straw was identified as a material with tall dimensions and the best structure of postharvest rice plant parts; therefore they used it mainly for thatched roof, dam, rope and flooring materials. The production activities also used traditional methods of producing postharvest rice plant materials, utilizing tools made from available materials such as bamboo, wood or stone.

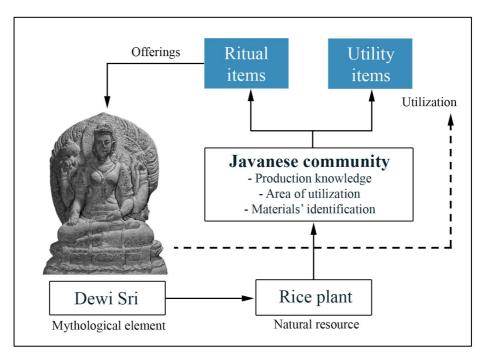


Figure 2.2: The Javanese rice postharvest culture forming process

In other side, people in the traditional Javanese community believe in mystical things or *jagad ghoib* that can protect the sustainability of farming activities. According to Andrew Lang's theory, in the tribe's mythology, the highest figure is the supreme god that maintains nature [2]. From this perspective, Javanese farmers' communities believe in Dewi Sri as the goddess of rice, who is believed to protect rice farming areas and provide adequate food to the community. Dewi Sri was born after the Hindus came to Java around the 6th century AD and was a fusion of the Hindu and Javanese cultures. To communicate with Dewi Sri, Javanese performed rituals with postharvest rice plants as offerings. These rituals were mainly performed in two important areas of rice cultivation activities, consisting of house and rice field (Figure 2.2). In rice fields, postharvest rice plant artefacts were used in rituals for the protection of rice cultivation activities and expressing gratitude for the rice harvest. Inside the traditional Javanese home, a

family's need for the presence of Dewi Sri was shown by the existence of a room referred to as the *senthong tengah*, where rice postharvest ritual artefacts were placed. This room was located in the centre of the house. Ritual processions inside house were performed in an effort to bring Dewi Sri close to their lives. In several statues, such as the statue in Barong Temple (built in the 9th century), Dewi Sri is visualized as a goddess holding rice ears in her left hand (Figure 2.2). According to A.C. Kruyt's theory, from the traditional community perspective of animism beliefs, the rice plant contains more *zielestof*, or subtle substance, than other plants [3]. The excessive levels of *zielestof* (subtle substance) in the rice plant cause humans to be careful in dealing and utilizing the materials because it can have a mystical effect. This belief is prevalent in Javanese farming society and it makes the community more cautious when dealing with the rice plant, since Dewi Sri has entrusted the rice plant to the society. This is how rice plants came to be used as offerings in rituals not only as elements of rice cultivation rituals, but also other as elements of marriage rituals, art performances and royal family rituals.

2.3 COMPARATION BETWEEN LOCAL (JAVANICA) and NEW (INDICA) RICE VARIETIES

In Java there are two categories of rice plants: Indica and Javanica. Indica plants includes *pari cere* (awnless rice), *pari endek* (short rice plant), and *unggul* (superior). Javanica includes *pari wulu* (awned rice) and *pari jero* or local. Javanica is a sub-japonica rice plant that is locally grown and adapted to specific agro-ecosystems. According to rice plant sub-varieties, classification are divided by age of rice, such as *pari ultra genjah*, a category that takes less than 90 days to reach harvest, *pari super genjah* (90-104 days), *pari genjah* (105-124 days), *pari sedang* (125-150 days) and *pari jero* (over 151 days) [4]. *Pari jero* is classified as a Javanica variety, which includes *Cempo Ireng* (local black rice), *Mentik* and *Rojolele* (local white rice).

The rest are Indica varieties, which include Silugonggo, Inpari 13, IR64 and Cisadane. Local varieties are taller compared than superior varieties, with dimensions between 120 and 180 cm. Superior varieties tend to grow to between 60 and 126 cm (Figure 2.3A). Based on several lab tests conducted at the Faculty

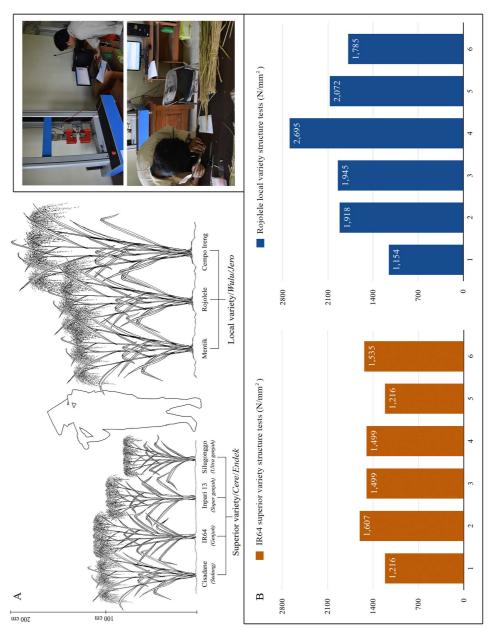


Figure 2.3: Rice plant dimensions and rice straw structures comparison between local and

superior variety

of Mathematics and Natural Sciences of Sebelas Maret University (UNS) in Solo, Central Java, *damen* from superior varieties are weaker than those from local varieties. The tests were conducted using 6 samples of *damen*. The local variety was represented by *Rojolele* as the most planted variety in Klaten Regency before the Green Revolution, and the superior variety was represented by IR64 as the most planted variety after the Green Revolution. The tests revealed that the *damen* from the local variety has a high power value for tensile strength with a rate of power of 1,928 N/mm². The strength of the superior variety is 1,429 N/mm2 (Figure 2.3B). The short dimension and more fragile structure of the superior variety means that the *damen* from new varieties could not be utilized in the ways that the Javanese employed rice plants in the past.

2.4 ARTEFACTS' PRODUCTION METHOD

In producing rice postharvest materials for daily needs, the process started with identifying their experience in dealing with materials. This process is classifying the postharvest materials into several characteristics which later be used to determine the appropriate utilizations (Figure 2.4). For instance, in utility purposes, from farmers community perspective, the characteristics of damen has the best structure compared to other parts, tallest dimension, easy to be folded (in wet condition), easy to be burned (in dry condition), largest diameter, solid when stacked and can cause itching skin. For *merang* part, it has a smooth texture, does not cause itchy for skin, easy to be burned and solid when stacked, and has a lot of foam when the *merang* ash mixed with water. For *wuli* and *beras* part, as the main output in rice cultivation activities, it has a highest economical values. As an act of respect to god, this perspective also creates these 2 materials as the most appropriate rice plant parts to be produced for rituals. In rituals, Javanese symbolic cultures also influence them in producing rice plant parts to communicate their symbolic meanings, such as in creating *sawur* or yellow rice as the element for infant's ritual have meanings as a representation of Javanese ideal skin which represents happiness. As tools for rituals, they also identify materials that possibly support ritual processions, such as for burning incense process.

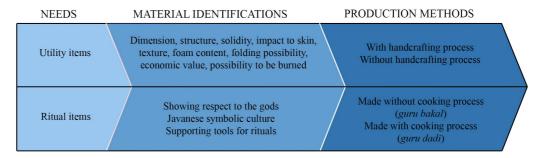


Figure 2.4: Postharvest rice plant artefacts production process

After the identification process of materials, the production process continue with production phase through the local knowledge of production methods. There are two main classifications for postharvest rice plant artefacts, those that are handcrafted and those made without handcrafting. In handcrafting methods, the Javanese process postharvest rice plant parts by bundling (dibundel), beating (ditumbuk), tying (ditaleni), weaving (dianyam), cutting (diketok), and mixing them with other materials (dicampur). In the process that does not use handcrafting, the methods consist of stacking (ditumpuk), burning (diobong), and measuring (ditaker). Ritual items are classified as guru bakal, or artefacts made without the cooking process or guru dadi, artefacts made with the cooking process, which is further divided into items that are steamed (dikukus) and boiled (direbus). The cooking process is essential as one of production processes in creating ritual items because of the symbolic meanings of the shapes of the food items. It also shows that Javanese are "sharing" food as gratitude to Dewi Sri and the natural elements through rituals performed in rice fields or houses.

In the production process, the social values in between community members are practiced in several activities, such as the process of creating *welit* (thatched roofs) by implementing the principle of cooperation. In the Javanese community, the activity of one asks for help for something that could not be done by him/herself by visiting a neighbor with manners is called *nyambat* [5]. If the work requires more labor, the information is spread to other neighbors.

The following below is a detailed explanation of the rice postharvest production method:

a) Bundling (dibundel)

Dibundel is the process of bundling damen, merang and wuli into a particular

size. The diameter alternatives for the artefacts usually consist of three sizes (Table 2, 1a). The first size is *untingan*, or a circle the size of the one made with the thumb and index finger. Second is *prentilan* or *untingan*, which is the size of a circle made by using both hands' forefingers and thumbs. The third is the largest diameter usually used for bundling *damen* or *merang* and it is between 15-30 cm in diameter [6]. This method is commonly followed with the tying process (*ditaleni*).

b) Beating (ditumbuk)

Ditumbuk is the process of beating damen to make a smooth texture material, such as a brush (Table 2.1b). This process is performed by using traditional tools such as the palu and alu created from wood or stone [6]. Palu is operated by using the same movement as a modern hammer while the alu is used with a vertical beating movement.

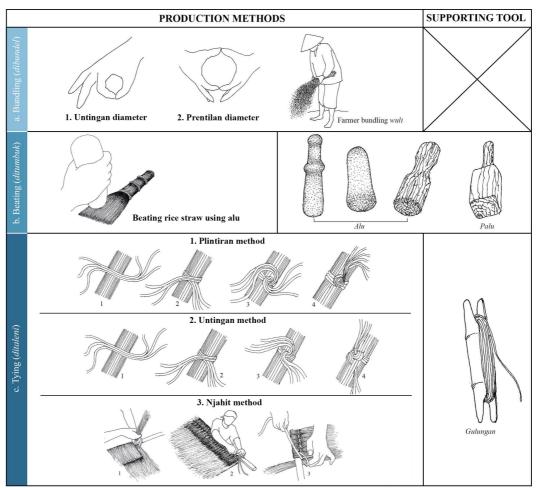
c) Tying (ditaleni)

Ditaleni is the process of tying damen, merang or wuli after performing the bundling process and is traditionally tied using ropes made from plants. There are three kinds of tying methods specifically used for postharvest rice plant artefacts, namely plintiran, untingan, and njahit or tying method similar to the sewing patterns (Table 2.1c) [6]. Plintiran is the most widely used to make artefacts and is created by twisting the rope until it is tight. Untingan is the tying method that is only used for wuli, which uses the stem of the wuli as the place to tuck in the rope. In architectural terms, one layer of a traditional Javanese roof is made by tying damen into bamboo frame by using njahit method and place it into a bamboo structure. The Javanese community in Klaten Regency traditionally utilized readily available natural materials for creating ropes, such as damen, kenaf (rami) and bamboo (pring apus). They sometimes use a bamboo tool called a gulungan for roll rope to make the tying process easier when producing welit. Njahit method is also utilized for the production process of other artefacts such as kelud or traditional brooms.

d) Weaving (dianyam)

There are two methods of *dianyam* processing utilized by the Javanese in weaving *damen* and *wuli*: braided (*dikepang*) and cross pattern weaving (*ngenam*)

Table 2.1: Postharvest rice plant materials production methods and supporting tools (1)



(Table 2.2a) [6]. *Dikepang* is produced by weaving three bundles of leaves in *wuli*. In ritual terms, *wuli*'s leaves are braided to resemble a woman's hair and are said to reflect Dewi Sri's (the goddess of rice) hair. Cross pattern weaving is created by simply repeatedly crossing two *damen*; it is used for creating toys called *wayang damen*.

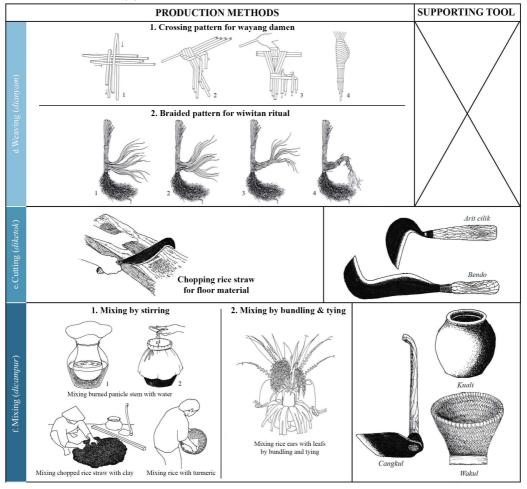
e) Cutting (diketok)

Diketok is the process of cutting damen or merang into artefacts that require small materials (Table 2.2b) [6]. The Javanese traditionally use a cleaver called bendo to chop damen for creating their traditional floor (jerambah) which utilized as a binding fiber in the production process. Small artefacts, such as tools for pulling out grey hair and arranging eyebrows, usually use a small sickle (arit cilik) as cutting tools.

f) Mixing (dicampur)

Dicampur is a process of mixing damen, merang, wuli, or beras with another material into one artefact with 2 approaches: mixing by stirring and by bundling and tying (Table 2.2c) [6]. In mixing by stirring method, the process uses a mix of two materials, such as water or clay. In producing banyu londho (traditional shampoo), water is usually stirred by hands with burned merang inside kuali or earthenware for water containers. Clay is stirred with chopped damen (around 1 cm) by using a hoe (cangkul) for the traditional floor material (jerambah). In producing sawur (yellow beras for ritual), beras is stirred by hands inside wakul or bamboo basket with turmeric that has been squeezed. In mixing by bundling and tying, the process is simply tying together leaves or plant materials with merang or wuli with a rope. This method is the most widely applied for offering artefacts such as kelud, kembang mayang, munggah molo, and kelir decorations.

Table 2.2: Postharvest rice plant materials production methods and supporting tools (2)



g) Stacking (ditumpuk)

Ditumpuk involves stacking materials using three kinds of methods (Table 2,3a) [6]. The first kind of stacking involves following the frame and uses welit and damen that have been tied into several layers; these layers are stacked by following the traditional roof truss design which consists of a four- sided roof surface design (limasan), two-sided roof surface design (kampung) or a single main roof surface design (panggang pe). The second kind of stacking involves arranging damen into a cross pattern or unidirectional pattern to create objects such as the traditional mat base (lemek damen) and seed covers (tumpukan damen). The third kind of stacking involves arranging damen, wuli, and mrambut into a mountain shape and is usually used for creating a tool for burning firewood (urup- urup), a structure for propping up firewood inside a traditional stove (ganjelan), and for burning unused materials in a place for burning unused damen in the house (bedian). In rituals, the stack with a mountain shape of wuli also symbolizes the direction of the sky, which is believed to be the residence of deities. Other supporting tools, such as a fork-shaped tool (garu) can be used for arranging damen into a specific pattern.

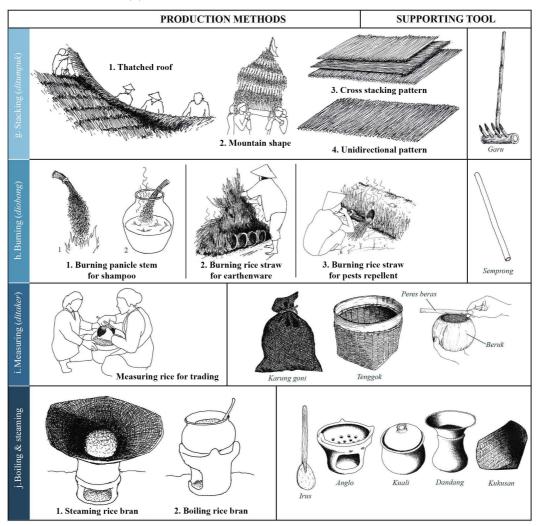
h) Burning (diobong)

The *diobong* or burning process is commonly performed after the stacking or bundling process (Table 2.3b) [6]. The Javanese utilize a flame from the combustion process to harden pottery. The smoke from burning *damen* is circulated by using a cylindrical blowing tool made from bamboo (*semprong*); the smoke is blown into rat holes and also utilized for repelling mosquitoes. The ashes from the burned *merang* are mixed with water to create the Javanese traditional shampoo called *banyu londho*.

i) Measuring (ditaker)

The Javanese utilized a type of measure (*beras*) as a traditional exchange tool to obtain their daily necessities (Table 2.3c). For transactions, the *beras* is placed inside a bamboo basket (*tenggok*) or gunny sack (*karung goni*) for storage. For an exchange, they use coconut shells (*beruk*) as the *beras* measuring tool with *peres beras* or a bamboo tool to sweep off the *beras* that crossed the top part of the *beruk* [6].

Table 2.3: Postharvest rice plant materials production methods and supporting tools (3)



j) Steamed (dikukus) and Boiled (direbus)

Both *dikukus* and *direbus* are categorized as part of the process of making *guru dadi* or cooked offerings by using rice bran (*bekatul*) for the material (Table 2.3d) [6]. *Dikukus* is a steaming process using a traditional stove (*anglo*) that uses firewood or charcoal. The steamer tools, *dandang* and *kukusan*, are placed at the top of the *anglo*. A brass tool called a *dandang* is the bottom part where the water is poured, while an inverted cone-shaped woven bamboo piece (*kukusan*) is placed at the top of the *dandang* and becomes the place for steaming *bekatul*. During the boiling process (*direbus*), clay pot (*kuali*) is placed at the top of the *anglo* and water with *bekatul* are poured inside this tool until cooked. Both of these methods are require *irus* or a traditional mixing tool made from bamboo and

coconut shells.

2.5 UTILIZATION AREA and ARTEFACTS

Based on the findings obtained from field research, there are 41 artefacts of postharvest rice plant utilizations in utility items, which can be categorized into four areas of utilization: residential areas, rice field areas, both residential and rice field areas, and other areas.

2.5.1 Utilization in Residential Areas

In residential areas, there are seven categories of rice plant utilization. They consist of self-care tools, roofing materials, house cleaning tools, flooring materials, cooking tools, rice seeding tools and tools for livestock.

a) Self care tools

For self-care tools (Figure 2.5), the Javanese mix water with burned *merang* for traditional shampoo called *banyu londho*. The function of this shampoo is besides to clean the hair, it also make hair black and withdraw the time of graying hair. This shampoo color is pure black, therefore related to the Javanese

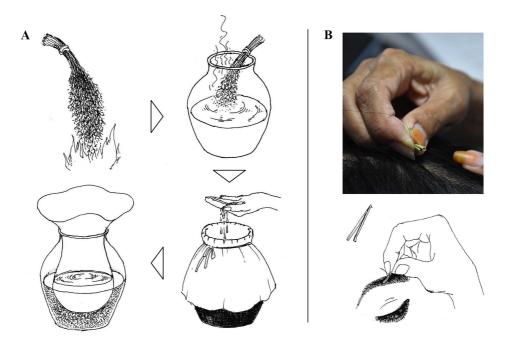


Figure 2.5: Banyu Londho (A), pulling gray hair and arching eyebrows utilization (B)

symbolical value, it is a symbol the beauty of the Javanese hair color [5]. To shape eyebrows and pull gray hairs they also utilized *merang* or *mrambut* part of rice postharvest materials. These processes were traditionally considered of bonding activities for women by having light conversation while pulling gray hair [6].

b) Thatched roofs

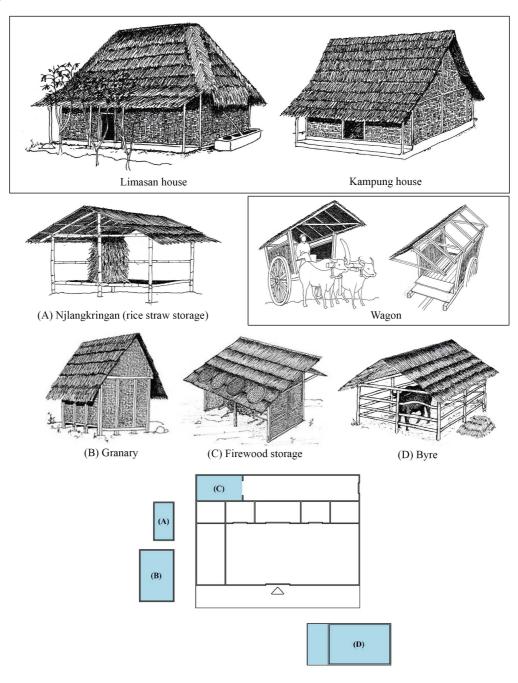


Figure 2.6: Rice straw for rooftop and location of the utilization around the house area

In house area, damen was used for creating new or renovating welit (thatched roofs). Regarding the tropical weather, Javanese were creating roof from damen that can reduce solar heat during the day. In terms of shape, Javanese thatched roof were formed into three kinds of shapes: limasan roofs, kampung roofs and panggang pe roofs (Figure 2.6). Limasan roofs were used for middle-class Javanese houses, while commoners generally used kampung roofs. Limasan has four sides of the roof, which means the element of the earth such as: sun, water, soil and fire. While kampung roof has two sides of the roof and formed conical shapes (viewed from side part), which associated with mountain shape as a dwelling place of gods [5]. Besides being used for residential roofs, kampung roofs were also used for byres, rice granaries, njangkringan or damen storage, and traditional wagons. The third and simplest type of roofing is panggang pe, which was used in spaces for storage of firewood and drying of tea leaves. In producing thatched roof, Javanese usually decide the production time based on calculation written in kitab Primbon or traditional Javanese calculation and rule related to the every aspect of life. After the date is decided, the ritual called munggah molo should be performed by placing offerings at *penuwun* (the detail of this ritual is written in chapter 3), which continued by producing thatched roof by villagers at *emper* or front yard of the house.

c) Flooring materials

For interior purposes (Figure 2.7), *damen* was used for a traditional flooring material called *jerambah*, which was made from a mixture of clay and chopped *damen*. This floor has a thickness of about 5 cm and hard characteristic therefore it easy to sweep dirt from the floor. It also warm when people sitting on the floor surface, because inside the house traditionally they were sitting on the floor not

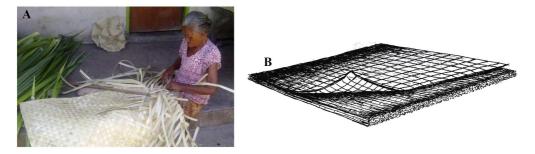


Figure 2.7: Pandan leaves for rice straw cover (A) and rice straw mat (B)

chair [6]. As a mat on top of the *jerambah*, *damen* was also used for a mat base called *lemek damen* by arranging *damen* laterally and covering it with *kloso*, or traditional mats created from *pandan* leaves. This mat was usually placed in main room and *damen* part became a cushion for mat in traditional Javanese life [6].

d) House cleaning tools

For house cleaning (Figure 2.8), the Javanese used *merang* to create *kelud* (brooms for the floor), ceiling brooms for cleaning the top part of the house, and *sulak* (brooms for cleaning things that lie parallel to the waist or knees such as *amben*, which are traditional beds made from bamboo) [6]. In mythological aspect, Javanese believe that in three months *kelud* will automatically fall into the floor [5]. They believe that the reason behind this occasion was a sign from Dewi Sri to create a new *kelud*. This is a mythological belief that encourages Javanese to sustain utilizing *merang* for their daily life.

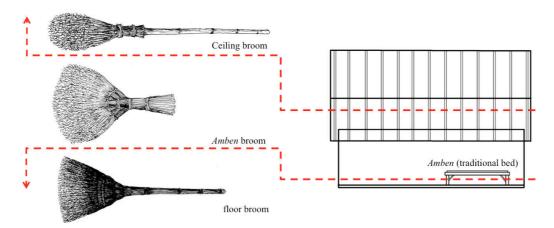


Figure 2.8: Three areas where traditional brooms were utilized inside house

e) Cooking tools

In kitchens, the Javanese used *merang* as *urup-urup*, or tools for burning firewood, and *mrambut* for *ganjelan* or propping firewood inside traditional stoves (Figure 2.9) [6]. From its characteristic, *merang* is the material that easy to be burned, therefore Javanese traditional community always keep *merang* inside kitchen for supporting cooking activities.

f) Seeding tools

In their yards, the Javanese utilized *damen* for rice cultivation preparation by covering the seeds to maintain humidity until rice shoots appear (Figure 2.9) as a

new planting season preparation [6].

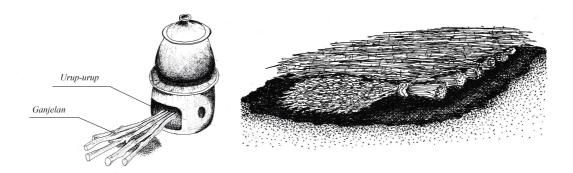


Figure 2.9: Utilization of *merang* and *mrambut* as *urup-urup* and *ganjelan* (left), *damen* for covering rice seeds (right)

g) Livestock tools

For livestock purposes, they used *merang* for *petarangan*, which is a place for chickens to lay their eggs (Figure 2.10). In one chicken coop, they usually have three *petarangan*. Adjacent to the byre, there was a place called *bedian*, used to burn unused *damen*, *merang* and husk, at their houses. Apart from processing the unused materials, the smoke from *bedian* was also used to repel mosquitoes that commonly congregated inside byres [6].

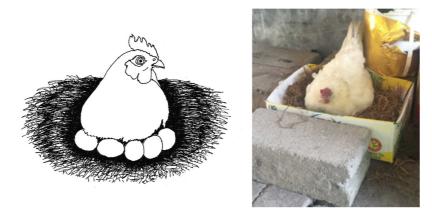


Figure 2.10: The utilization of *petarangan*

2.5.2 Utilization in Both Residential and Rice Field Areas

In both residential and rice field areas, there are two categories of utilization from this area: brushing tools and toy materials.

a) Brushing tools

For brushing tools (Figure 2.11), the Javanese used *damen* or *merang* to create *oser*, a traditional brushing tool used for brushing chalk water onto the walls of their homes and in rice fields for repelling insects. The activity of *ngoseri* or brushing the *gedhek* (wall made from bamboo) part or house was performed by mutual relation between villagers with several aims, such as: to make the house look clean, to avoid termites from eating *gedhek*, to make the house look bright at night because there was no light in the past and to symbolizing the celebration of villagers for *Jumenengan* day or birthday of the coronation of the king [5]. While in rice field, *oser* was utilized for splashing tobacco tea water to rice plants to repel insect [6].



Figure 2.11: *Oser* reconstruction result and the visualization of utilization process

b) Toy

Damen was also used for a traditional toy called wayang damen (Figure 2.12), or a damen puppet. Wayang damen was inspired from the shape of Javanese wayang kulit (shadow puppets), which were the main form of entertainment for the ancient Javanese community. To fill spare time in farming activities, farmers creating wayang damen to be played by his child. The farmers' children play wayang damen by pretending as a dhalang or puppeteer and imagining the story that played in a wayang kulit show [6]. Nakula and Sadewa or twin figures in Pandavas was the most meaningful puppet figures for farmers community. Among they five brothers of Pandava, Nakula Sadewa is the most unpopular character but has an important role in society. The meaning is, if one enters the

world of agriculture then he will not be popular, but very important inside the society [7].

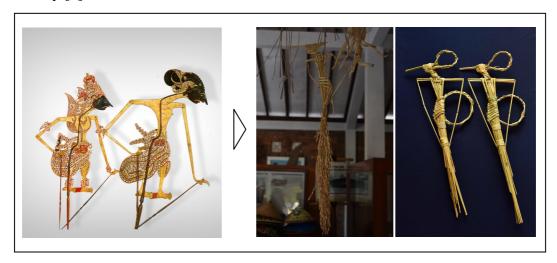


Figure 2.12: The wayang kulit shape and transformation into wayang damen

2.5.3 Utilization in Rice Field Areas

In this area, there are eight categories of utilization: ropes, toys, pest repellent, irrigation, seeding, rest tools, roofing, and wage for farm workers.

a) Irrigation tools

Before the rice cultivation process, *damen* was used to make irrigation tools, which were used to create dams to increase the water level in secondary channels (Figure 2.13). Through this process, the *damen* dam also serves as a natural filter for water to be utilized for the next farming areas or daily needs [6]. After farmers flood their paddy fields with enough water, *damen* was utilized as a plug in the waterway holes in *galengan sawah* (paddy dikes) (Figure 2.13).

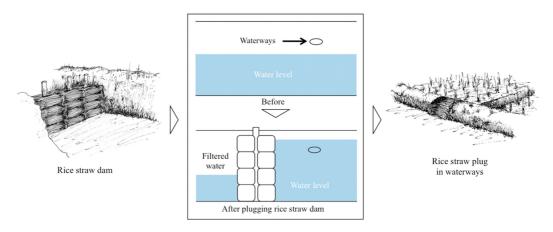


Figure 2.13: The utilization of rice straw dam and plug

b) Seeding tools

When the irrigation canals were being prepared, farmers used *damen* for seeding rice plants by covering the seeds to protect them from being eaten by animals or swept away by water (Figure 2.14). With a thickness of 10 cm of stacking *damen*, the other purpose is to resist evaporation of ground water so that the rice seeds remain moist. The seeds were taken using the process of *nggrontongi*, or choosing the best *wuli* for the next planting [6].

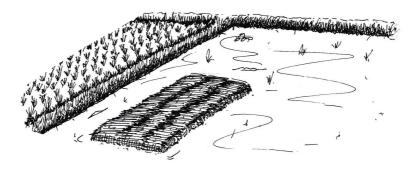


Figure 2.14: Rice straw cover for rice seeds

c) Pests repellent tools

In the treatment process, farmers splashed tobacco tea, or water infused with crushed tobacco, to repel insects using *oser*. To repel rats, farmers used *emposan*, or burning *damen* mixed with sulphur, by putting combustion fumes into the rat holes (Figure 2.16). To deal with bird pests, farmers used *memeden manuk*, or scarecrows made from *damen* (Figure 2.15). Farmers prefer to repel the birds

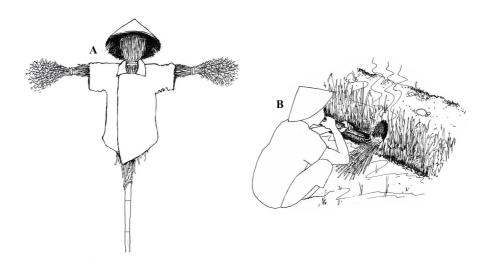


Figure 2.15: *Memeden manuk* (A), *emposan* (B)

instead of killing them to maintain the balance of nature. In terms of values aspect, *memeden manuk* has a philosophy as the existence of Javanese farmers who "protect" rice as staple food [8].

d) Toy (harvest time)

While waiting pest birds, *dramenan* or flute made from *damen* (Figure 2.16) was usually created by farmers' children as a toy to fill their spare time. Besides being used for toys, *dramenan* was also used by farmers' children for celebrations devoted to Dewi Sri during harvest season by blowing it while accompanying their mother harvesting rice. This understanding was taught by parents to their children when playing *dramenan* [8].

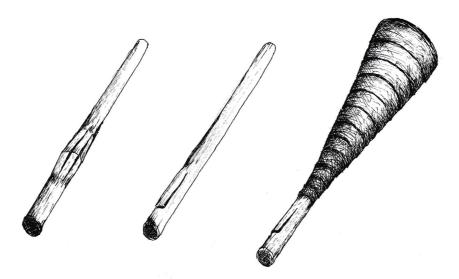


Figure 2.16: Variation shapes of dramenan

e) Roofing materials

In rice field area, damen was utilized to create or renovate the thatched roof for gubuk damen (damen huts), gubuk panen (harvest hut) and gubuk cangkruk (discussion hut) (Figure 2.17). Gubuk damen is a main place for controlling the rice plant cultivation process and also the farmer's resting place, gubuk damen (damen huts) were created and placed in the middle of each rice field area (Figure 2.17). Gubuk panen is a hut where harvested rice plant is collected, tied up and stacked before the distribution process. Therefore it located in the middle of the rice field location to ease the process of gathering harvested rice. Gubuk cangkruk is a place for having discussions about progress, safety and sharing other information related to the improvement of the rice farming process. It usually

located in the corner of rice field and at a crossroads as the most strategic location when farmers gather inside the village [6].

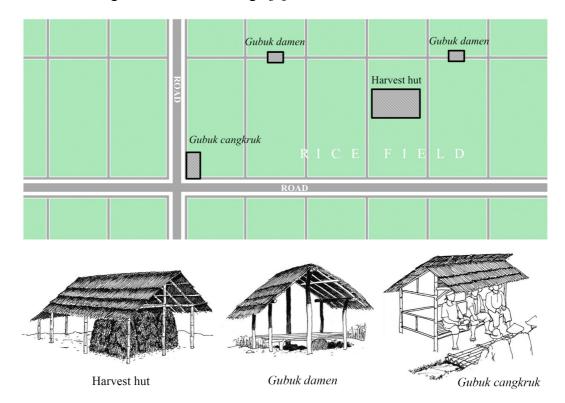


Figure 2.17: Rice straw roofs utilization in rice field area

f) Rest tool material

Merang was utilized for bantal merang (merang pillow) inside gubuk damen because of its soft characteristic and does not cause itching to the skin. Cushions are usually associated with deep sleep, but in the Javanese community there is a proverb from the bantal merang "bantal merang mereme arang-arang", it means that they should avoid sleep too often and have to be more struggle in living life [5].

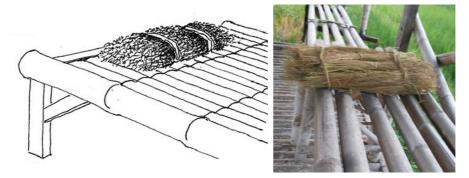


Figure 2.18: bantal merang (merang pillow)

g) Tying tools

When harvest time arrived, in the distribution phase of the postharvest rice plant, farmers used *damen* for tying *wuli* and *damen* (Figure 2.19). For *wuli*, there were two methods for tying which depended on the diameter of the plant. *Untingan* is the size of the circle made by the forefinger and thumb, and *prentilan* is the size of three to four *untingan*, which is about the size of a circle made by both hands' forefingers and thumbs. The tying was completed directly after cutting the harvest *wuli* and farmers were placed inside *gubuk panen* (harvest huts), which used *damen* for the thatched roofs (Figure 2.6). Then *untingan* were merged into *prentilan*, ready for the distribution process. While tying *damen*, farmers used a method called *plintiran* to twist *damen* into 60–75 cm bundles. The *untingan* tying method is very simple but strong; therefore it represents simplicity and strength of the Javanese *gotong royong* or mutual cooperation values which performed in this tying process [6].



Figure 2.19: Reconstruction of *untingan* and *plintiran* tying methods

h) Wage materials

After the harvest process, bundles of *wuli* in *untingan* were used for paying rice farm workers. Usually, rice field owners used the calculation of *moro* 20. This means that if the rice field owner receives 20 *untingan* from the harvest, rice workers will receive 1 *untingan* of *wuli* as wage. Sometimes with the purpose of helping the family or neighbors, work which is usually done by two people could be performed by five people [6].

2.5.4 Utilization Outside Residential and Farming Areas

Postharvest rice plant materials were also used in areas other than residential and farming areas. Outside these areas were three categories of utilization for postharvest rice plants: public entertainment supporting tools, creating pottery, and exchange materials for obtaining daily needs.

a) Public entertainment supporting tools

In Javanese traditional entertainment such as shadow puppets and cockfights (Figure 2.20), *damen* was used for supporting tools such as the puppet display in shadow puppet performances and the mat for cockfight arenas [5].

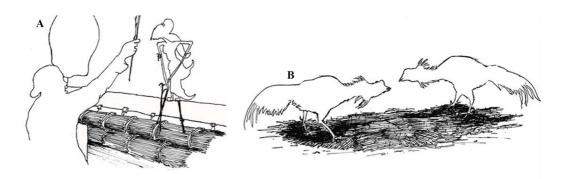


Figure 2.20: Shadow puppet display (A), cock fight arena (B)

b) Tool for craft making process

As a household utensil, traditional Javanese society utilized earthenware as container for water or *beras*. The traditional process of creating earthenware uses *damen* for burning material, which was traditionally performed by Javanese



Figure 2.21: Burning *damen* for hardening earthenware craft

traditional craftsmen (Figure 2.21). This process is done to harden the clay [6].

c) Trading material

Another use is *beras*, used for exchange activities in the effort to obtain daily necessities (Figure 2.22). *Beras* with its intrinsic value was used as an exchange tool using a measuring tool called *beruk*, made from coconut shell. Usually *beras* was exchanged with people from other villages that produce other natural products such as fruits and meats [6].



Figure 2.22: Beras measured by beruk tool for exchange material

2.6 VALUES and PRODUCTION ANALYSIS

Related to the analysis of rice postharvest artefacts, the point of view is divided into two aspects, values and production methods.

2.6.1 Values of Utility Items

In the process of utilizing postharvest rice plant artefacts, the Javanese are actually implementing their individual, community relation, environmental awareness, and mythological beliefs. These activities can be seen in utilizing the artefacts for utility purposes, and the implementation of community relation values can be seen in several artefacts, such as *oser* or traditional brush utilization. This artefact was used for brushing chalk water onto the walls of houses through the principle of mutual cooperation and kinship, which is categorized as the act of *memayu hayuning bebrayan*. This term means "to beautify the behaviors in human relationships". In these terms, neighbors help each other to finish the work without requesting payment. The utilization process of *oser* between villagers also

reflecting a sense of gratitude from the village community for the birthday of the anniversary of king's coronation day which became the act of obedience to the king inside the community. Symbolic values of Javanese which formed inside community was practiced in artefacts utilization process such as the black color of banyu londho (merang shampoo) reflects the ideal hair color for the Javanese. As education media, the community relation shown such as in the utilization of wayang damen as a media of parents taught their children about the classical story from wayang kulit. The last values inside community relation were economy through the mutual relationship between people who do not own beras and own beras by utilizing beruk or coconut shell as a measuring tool of rice quantity.

From individual values, in utilizing artefacts, Javanese are in a state of practicing memayu hayuning pribadi, which means physical and emotional personal self-perfection. This act could be seen from the utilization of artefacts related to their personal needs such as banyu londho, which is a traditional soap for cleaning their bodies. Related to their belief in the mythological element, several artefacts were used not only as utility items, but also for symbolizing their respect to Dewi Sri as the rice goddess, such as kampung (thatched roofs) and dramenan (the damen toy). Kampung roofs were not merely seen as a haven for the Javanese, but from the pointing up arrow shape was also a symbolizes the direction to god, who are believed to reside in the sky. Likewise, the dramenan was not only a toy for children, but in harvest time, it also symbolized happiness addressed toward the Dewi Sri for the harvest that she gave to the community. From environmental awareness values, Javanese were performing the sustainable act in terms of utilizing rice postharvest materials, such as in producing kelud, they were motivated by Dewi Sri as the mythological element to continuously producing this *merang* broom after three months or the day when the broom is broken. Another relation to environment through artefact also showed by Javanese farmers by only repelling birds through the utilization of memeden manuk (scarecrow) as an act to protect the natural balance which important for agricultural activities. There two activities are reflecting the Javanese values of memayu hayuning bawono or "to beautify the world", by protecting the nature.

2.6.2 Production Methods of Utility Items

In terms of postharvest rice plant parts, *damen* was the most utilised material, used for 28 different purposes. This was followed by *merang* (9 types), *wuli* (2 types), and *mrambut* and *beras* with one type each (Figure 2.23, diagram A). These numbers illustrate that *damen*, the middle part of the postharvest rice plant, is the most useful because of its structure and height. Tying (24 artefacts), bundling (24 artefacts) and stacking (22 artefacts) are the most utilized production processes (Figure 2.23, diagram B). Utility items were made through 1 production process such as mat base by stacking *damen* with unidirectional pattern, through 2 production processes such as *jerambah* (traditional floor) by cutting and mixing *damen* with clay, and through 3 production processes such as *welit* (thatched roof) by bundling, tying and stacking *damen* into roof truss.

From the quantity of production process in completing utility artefacts, the greatest utilization (with 17 artefacts) was completed through two production processes. Continue with 13 artefacts with three production processes and 11 artefacts with one production process (Figure 2.23, diagram C). This quantity shows that most utility items created from *damen* require a relatively long time for production. They also require specific craftsmanship skills for several items such as thatched roofs, brooms and *wayang damen*. The production characteristics above mentioned arguably show that Javanese were utilizing rice postharvest materials, especially *damen* and *merang*, to create objects with specific thickness characteristics such as brooms, mat cushions, thatched roofs, scarecrow and shadow puppet displays. These characteristics differentiate them from the design output of artefacts made from *damen* and *merang* with other natural resources such as bamboo or pandan leaves, as the latter commonly produced flat surface crafts such as traditional wall, mat and basket, and also structural items such as roof truss.

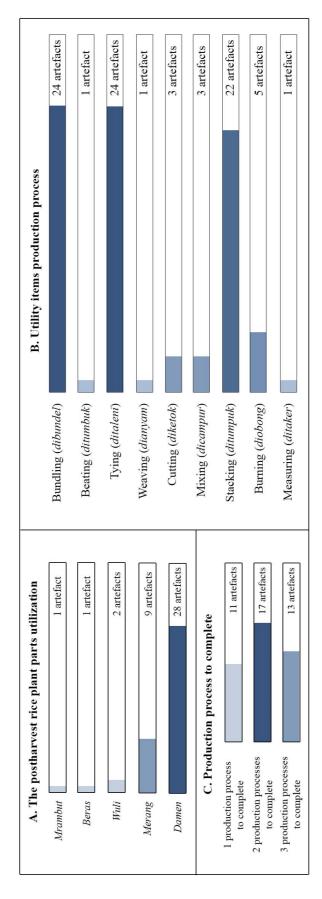
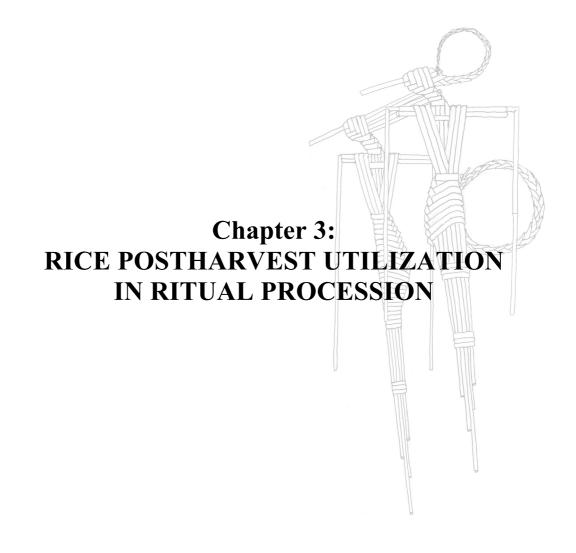


Figure 2.23: The analysis of production process in utility items

Notes

- 1) Based on oral interviews with researchers of Borobudur Temple Conservation Hall, August 2015.
- 2) Lang A. *The Making of Religion*. London, Longmans, Green & Company, 1898.
- 3) Kruyt A.C. *Het Animisme in den Indichen Archipel*. S-Gravenhage, M. Nijhoff, 1906.
- 4) Based on oral interviews with researchers at Institute for Agricultural Technology, Yogyakarta, August 2015.
- 5) Based on oral interviews with tetua desa in Klaten area, September 2015.
- 6) Based on oral interviews with senior farmers in Klaten area, September 2015.
- 7) Based on oral interviews with Javanology professors in Sebelas Maret University, Surakarta, September 2015.
- 8) Based on oral interviews with head of Javanese Agricultural Museum, August 2015.



CHAPTER 3: RICE POSTHARVEST UTILIZATION in RITUAL PROCESSION

3.1 The ORIGIN of the UTILIZATION for RITUAL PROCESSION

Rice has become a benchmark for the tranquility of life in Javanese society, which is an ethnicity in the central and eastern part of Indonesia's Java island (Figure 3.1). If the Javanese have enough rice stocks to meet their basic needs, they have reached what the Javanese call "*tentrem uripe*", or a peaceful life. In an effort to reach and sustain this level, the Javanese perform rituals with postharvest rice plant parts.

Information from historical sources such as old inscriptions, ancient poetry, and physical evidence in old temples relates to the origin of postharvest rice utilization for rituals in Javanese society. A Barahasrama inscription from the 9th century AD includes the words *Vras caturvvarņna* or *beras* (rice). The words are written in 4 colors used by the Javanese as a part of rituals [1]. The term *beras*, in a combination of red and white colors, was also recently found by local people inside an old *peripih* (Figure 3.1), or place for offering, in the Prambanan temple of Klaten Central Java (built in the 9th century) [2]. Another example appears in the *Kakawin Ramayana* (written in approximately 870 AD), which is a rendering of Javanese ancient poetry. In the rendering are written the words, "*kumba kuçāgra wretti wētih*". This translates to mean that unhulled rice fried without oil was used for "*sajiniń yajña ta humadań*", or offerings for salvation.



Figure 3.1: Red white rice with *peripih*, i.e. places for offering

3.2 CATEGORIES of JAVANESE COMMUNITY

Javanese are people who use Javanese as a native language and live in the central part and eastern part of Java island. Based on Clifford Geertz's research, Javanese society is divided into three categories, namely *santri*, *abangan* and *priyayi* [3]. *Santri* is a group of Javanese Moslems who practice religion in accordance with Islamic *shari'a*, or rules. *Abangan* is a group of Javanese Moslems who practice Islam in a more syncretic way compared with the *santri* group, which is more orthodox. The *abangan* group tends to follow traditional beliefs, which contain elements of Hindu, Buddhist, and animist traditions; their system is called Java religion. These two groups are classified based on the attitudes and behavior of the people in practicing their religion. In contrast, *priyayi* is used as a term for people who have a higher social level or nobility. The opposite of the *priyayi* class is usually called the *wong cilik*, which consists of farmers and those with low incomes.

3.3 JAVA RELIGION (KEJAWEN)

Java religion has the basic characteristics of syncretism and high tolerance. Therefore, the Javanese are still performing traditional rituals even though they have also adopted official religions such as Islam and Christianity. From the religious rituals perspective, the belief in the existence of deities as rulers above mankind as influenced by Hinduism helped to form Java religion, which now involves belief in negotiating with gods through rituals [4]. For example, rituals of Java religion that are practiced by Javanese include *slametan*, or celebrations in which the practitioner invites relatives or neighbors; *ruwatan*, a ritual that aims to expel bad luck; *tingkeban*, a ritual that is performed when a baby was still in the womb; and *korban sesajen*, a ceremony of offering sacrifice [4].

In performing rituals there are various kinds of equipment, called *uborampe*, used to implement and support rituals. These *uborampe* are gathered for *sesajen*, or offerings, to communicate and negotiate with gods. For Javanese, *sesajen* serve as symbolic messages which represent not only hope that god will respond to wishes and concerns, but also motivation. The motivational aspect is represented by the messages associated with each component in *uborampe*. These symbolic

messages represent the Javanese preference to use indirect communication, as expressed in the proverb "wong Jowo nggone semu, sinamun ing samudana, sasadone ingadu manis" [4]. This proverb means that Javanese tend to be apparent or veiled, full of symbols and likely to convey subtle words. Javanese symbolic meanings are formed by creative thoughts, feelings and intentions, which are implemented not only in rituals but also in architecture, spatial concepts, textiles, literary arts, etc.

The Javanese decide the ritual date by using their traditional calendar, which combines Hindu, Islam, and a few influences from the western calendar system. The Javanese calendar divides time into *windu*, or cycles of eight years, per year, month, week, day, and hour. In the week classification, they combine seven days of the western date system with five days of *pancawara*, or the five market days; therefore, there are two dates in one day in the Javanese calendar system [5]. *Pancawara* was used by the Javanese traditional market in the past to calculate the best dates for trading activities. This calendar is also used to calculate the best date for many other activities, such as working, rituals, weddings, and farming.

3.4 The ORIGIN of DEWI SRI and RADEN SADHONO

Dewi Sri is adapted from the concept of India's Lakshmi, the goddess of fortune, prosperity, and wealth; the "creative response" of the Javanese to this Indian influence transformed the deity [6]. In this transformation, the concept of the Indian goddess was adopted by the Javanese and assimilated into their older beliefs. The mythology of the origin of rice in Java has several versions of the stories of how Dewi Sri brings rice into the farmers' community. The Wawacan Sulanjana claims that rice plants were grown from the navel of Dewi Sri's corpse, while the Tantu Panggelaran, which was written between the 15th and 16th centuries, claims that rice plants did not grow from Dewi Sri's body, but from inside her bird's gizzard.

In yet another myth, the strong influence of Hinduism affects the diverse stories of Dewi Sri. This can be seen in the Javanese beliefs about Raden Sadhono (Figure 3.2), the reincarnation of the Indian god Vishnu as Dewi Sri's counterpart, who is a male god known as a custodian and preserver of the universe. The *Babad*

Ila-Ila, a historic piece of Javanese literature, tells a story which represents the combination of the mythologies of Javanese and Indian culture. This story states that Dewi Sri and Raden Sadono were born as *kedhono-kedhini*, or twins, who angered their father and were subsequently cursed by being turned into a snake and a bird. In their journey, Dewi Sri, as a snake, stayed inside a *petanen* or *senthong tengah*, which is the centre room inside a farmer's house (which inspired many Javanese to create a room called a *senthong tengah* for praying to Dewi Sri at the centre of the house) [7]. From this story Javanese also traditionally believe that the snake is a sacred animal that is a good omen. This close relationship between goddess and animal can be seen in the Dewi Sri visualization in shadow puppet art performances (Figure 3.2). For the Javanese, Dewi Sri is known as the goddess of rice and Raden Sadhono as the god of other crops; the two cannot be separated. Sri-Sadhono also represents several other symbolic pairings such as water and soil, sperm and ovum, and sun and earth.

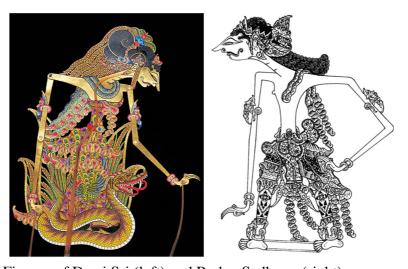


Figure 3.2. Figures of Dewi Sri (left) and Raden Sadhono (right)

3.5 RICE VARIETIES for RITUALS

On Java Island there are two varieties of rice that are planted, namely *pari wulu*, or Javanica, and *pari cere*, or Indica. Before the Green Revolution that the government intensively introduced in 1970, Javanese farmers were planting *pari wulu* for their daily needs in consideration of quality, taste, and rice plant parts such as *damen* (rice straw) and *merang* (panicle stem). They were rarely planting *pari cere*, which produced low quality rice not only in taste but also in terms of

other rice plant parts. These issues that *pari wulu* is the best quality rice plant. Therefore, in ritual matters, as a form of respect to a god, *pari wulu* is typically used. Physically, the quality of *pari wulu* also supports the ritual requirements, particularly as related to production.

3.6 UTILIZATION of POSTHARVEST RICE PLANT in RITUALS

Due to Javanese religion and the close relationship with rice farming activities, findings indicate that the Javanese are utilizing 23 postharvest rice plant artefacts as ritual elements related to seven specific areas of their lives: rice fields, rice fields and houses, houses, human phases (from birth to death), traditional arts performances, royal family rituals, and sacred day rituals.

3.6.1 Rituals in Rice Fields Area

There are two types of *guru dadi* offerings made from *bekatul* used in ritual processions regarding the rice agricultural area.

a) Horog-horog in nyajeni ritual

In the *nyajeni* ritual (Figure 3.3), which is performed before planting seeds, *bekatul* is processed into *horog-horog* by being steamed. The *horog-horog* is then served *ditakir*, or placed inside a banana leaf. The ritual is performed by the rice field owner or by *tetua desa* (village elders) in the evening by placing the *horog-horog* in the paddy dike alongside eggs and five bananas, which are plugged vertically in the rice fields. Later the rice field owner recites a prayer to Dewi Sri for protection of the rice plants until harvest time from things such as pests and bad weather; the prayer is closed by eating together with rice field workers [8]. For the Javanese, *bekatul* is regarded as the oldest brother of rice because *bekatul* was born first. This condition is associated with the Javanese proverb "*kakang kawah adi ari-ari*," which literally means "the older brother of the baby is the fetal membrane, and the younger brother is the placenta" [9]. In the Javanese value system, *beras* is associated with the baby and *bekatul* with the fetal membrane. As *kawah*, *bekatul* has the same protective function for the *beras* as the fetal membrane does for the baby.

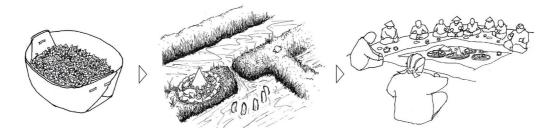


Figure 3.3: Horog-horog artefact and nyajeni ritual procession

b) Jenang tuo in slametan ritual

The *slametan* ritual (Figure 3.4) is performed in villages that do not perform the *nyajeni* ritual. In the *slametan*, which is performed before planting seeds, *bekatul* is processed into *jenang tuo* by being boiled in water. Like the *horog-horog*, the *jenang tuo* is then also served *ditakir*. The *slametan* ritual is performed in the morning before farm workers start ploughing and is initiated by the rice field owner together with around four ploughing workers as participants. The ritual starts with a prayer by the rice field owner or by *tetua desa*, which has the same format as the prayer of the *nyajeni* ritual. After praying to Dewi Sri, the ritual continues by placing the *jenang tuo* offering in the east corner of the rice field or in the location where the sunrise first hits. After finishing this ritual, all of the participants in eat together. Key foods at the meal are *nasi* (cooked rice), roasted chicken, and a traditional snack that is served by the rice field owner. After this, the ploughing workers are "allowed" to work [9].

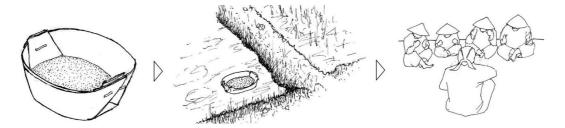


Figure 3.4: Jenang tuo artefact and slametan ritual procession

3.6.2 Rituals in Rice Fields and the Home

There are two artefacts of *damen* and one of *wuli* (rice ear) used in ritual processions related to rice fields and houses areas.

a) Braided wuli, lemek damen and damen with incense in wiwitan ritual

Wiwitan is the ritual of gratitude to Dewi Sri, which is performed before

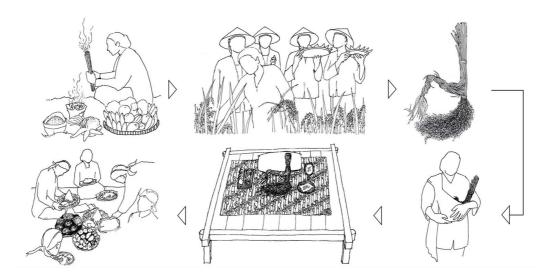


Figure 3.5: Wiwitan ritual procession

harvesting time (Figure 3.5). The ritual begins in the rice fields when the leader recites a prayer of gratitude to Dewi Sri on a lemek damen (rice straw mat) and burns a bundle of damen with incense as an invitation for her. A rice field owner, or a dukun methik (shaman), then selects and cuts the best rice plants. Later the wuli are tied into a bundle, and the *lamen*, or leaves located in the wuli, are made dikepang, which means that they are braided to resemble a woman's hair, reflecting Dewi Sri as a goddess. This "Dewi Sri" is taken home by the rice field owner (preferably by a woman) with full respect and concentration. The effigy is either honoured via diemban or picked up by using jarik, or a piece of traditional fabrics with dimension of 2 x 1 meter with batik motif, and placed inside the home. In a kampung house (house owned by ordinary family), the item is placed inside the senthong tengah [10]. In a limasan house (house owned by middle-class family), which usually has a granary, the item is placed above the door inside the hut. This bundle is treated like the goddess herself, so all homeowners place 'Dewi Sri' on the bed covered with jarik at night. The room where the goddess "sleeps" is also typically furnished with tools used by Javanese women, such as a mirror, and with a cok bakal, or a package of offering placed on a banana leaf and consisting of a betel leaf, tobacco leaf, areca nut, lime betel, and sap from gambir. The last step of this ritual is to share traditional foods with neighbors. The wiwitan ritual is thus held in two places and thereby acknowledges Dewi Sri as the protector of rice fields and houses in Javanese communities.

In an effort to realize the shape of the Dewi Sri in *wiwitan* artefact, the Javanese are mixing the similarity of human and rice plant anatomy representation and meaning element. The similarity between human and rice plant shows in stem part of rice *wuli* is represented as the "neck" part of human and plant, and the leaf part is represented as the "hair" part of human and plant. While for the grain part, Javanese are using the terminology Dewi Sri's body and leg for showing the symbolical meanings of: *beras* (grain part) as a leg has a function as "feet", so that the Javanese staple needs can "stand" from *beras* part (Figure 3.6). In technical aspect, positioning the grain at the bottom is easier placed in a stand position and when picked up in *diemban* or picked up position compared to grain as the top part [9].



Figure 3.6: The association of human body, plant anatomy and meaning in Dewi Sri artefact

3.6.3 Rituals in Housing Areas

There are three artefacts of *wuli* and one of *beras* used in ritual processions related to residential areas.

a) Sri-Sadhono in senthong tengah

Influenced by beliefs in Dewi Sri and Raden Sadhono, the Javanese use a ritual artefact called Sri-Sadhono, which is formed from a pair of *wuli* bundles (Figure 3.7, A). This simple artefact is created by *tetua desa*, house owner or by *dukun methik*, in which a pair of *wuli* are bound together and then positioned in

the shape of an arrow directed to the sky at the top side of a *senthong tengah*, or "room for Dewi Sri," inside a *kampung* house. The Sri-Sadhono artefact has multiple interpretations within Javanese culture. The first meaning is that the *wuli* symbolizes a negotiation with Dewi Sri and Raden Sadhono in order to obtain prosperity in terms of basic needs, so the household can achieve *tentrem uripe*, or a peaceful life. The artefact also symbolizes the act of asking for permission from Dewi Sri and Raden Sadhono before harvesting their "children" the next day. The shape of this artefact names its direction toward the sky and carries the meaning of contemplating the location of the deities, who are believed to reside in the sky. In another perspective, bundles of *wuli* are placed as a reminder for Javanese to always cultivate rice to meet their basic needs [9].

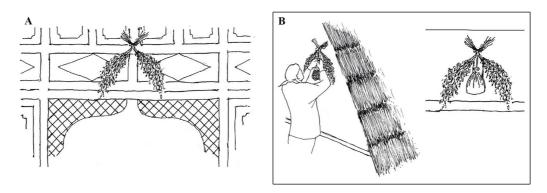


Figure 3.7: Sri-Sadhono artefact in *sentong tengah* (A), Sri-sadhono in granaries (B)

b) Sri-Sadhono in granaries

A *limasan* house, or a house for the middle class level, usually has a granary as a place for stacking *wuli*. Above the granary door, Javanese place a Sri-Sadhono artefact along with a *bagor*, which is a small bag containing a needle and thread (Figure 3.7, B). In this case, *wuli* are symbolizing the expectation that the *beras* inside the granary will abound and be always capable of fulfilling the household's daily needs. The needle and thread symbolize the safety of the stored rice inside the granary [9].

c) Wuli and beras in munggah molo ritual

The *munggah molo* ritual is for completing construction by raising the roof top of the house after bringing an offering to the top of the house (Figure 3.8). For the Javanese, the top part of the house is a sacred location, because this place is the

part that is facing directly to god. The top structure of the house where *munggah molo* offerings are tied is called the *penuwun*, which means "the request," or more specifically, "the place when directing a request of the house owner to god."

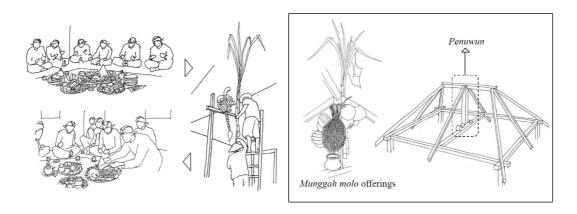


Figure 3.8: Munggah molo artefact and ritual procession

In *munggah molo* rituals, the procession is started by inviting neighbours, construction labourers, and *tetua desa* in the village or religious leaders to lead the prayers. The next day, the prayer is performed once again and is followed by construction labourers presenting a bundle of *uborampe*, which contains a bundle of *wuli* with other offerings such as a red white flag, a pair of sugar cane, coconuts, bunch of bananas, golden nails, and coins. *Beras*, another part of the postharvest rice plant, are also placed at *penuwun* inside a *kendi*, which is a tool for storing rice. In this ritual, *wuli* bundles symbolize prayer to the god and also motivation for prosperity especially related to *beras* as basic needs. While the *beras* inside the *kendi* means *beras* as human and *kendi* as a house therefore it represents withstand staying at home.

The ritual is closed by a prayer led by a religious leader or *tetua desa* who was invited to the ritual, which is performed the previous day. At the end of the prayer, the house's owner cuts off the top of *tumpeng* rice or *nasi* into a conical shape and gives the top to one of the family members. After this ritual is finished, the construction laborers can continue their construction works by placing the roof [9].

3.6.4 Rituals for Infants, Marriage and the Dead

There are three types of *beras* and *merang* and two *wuli* used in ritual processions for infants, marriage and dead persons.

a) Sawur in tedak siten rituals

Tedak siten is a ritual conducted for infants of 7-8 months or those beginning to walk. This ritual is performed as a tribute to the earth as the place upon which the human being is able to stand. In terms of postharvest rice plant utilization, beras is mixed with turmeric, which turns it yellow (Figure 3.9). This yellow beras is placed inside a besek, or bamboo box, with coins and used in a sawur, or spreading procession that is held before the final phase of the ritual. In this procession, the mother offers beras and coins seven times from the besek to the children who were invited to the ritual. The sawur procession symbolizes the expectation that the infant will have a generous characteristic in the future. The yellow colour of the beras symbolizes the Javanese words "kuning sumringah," which refer to the favoured Javanese skin colour and represents happiness. The seven repetitions of spreading during the sawur relates with "pitu," or the word for the number "seven" in the Javanese language; in terms of Javanese word abbreviation, the relation to pitu or seven in this ceremony means the child will always receive "pitu-lungan," or guidance and help from god [9].

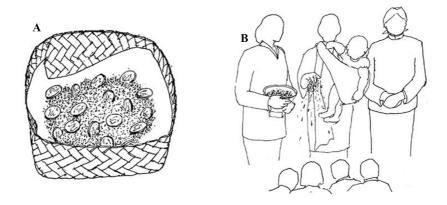


Figure 3.9: Sawur artefact (A), tedak siten spreading sawur procession

b) Kerun, kembang mayang, kelud, and kacar-kucur (marriage ceremony)

The Javanese traditional marriage ceremony is divided into two processions, namely the processions of preparation and for the actual marriage ceremony. In the wedding preparation procession, the Javanese utilize *wuli* in constructing a *kerun*, or decorative gate in front of bride's house. This gate is built 40 days

before the marriage date by creating a bamboo structure (Figure 3.10). One day before the wedding procession, the parents of the bride select the best *wuli* from the rice field and ask the neighbors to install decorations into the *kerun*. In addition to *wuli*, there are various decorations, which consist of *bleketepe* (woven palm leaves), *janur* (woven coconut leaves), *pisang tuwuhan* (intact banana plants), and various leaves. *Wuli* in this decoration represent the prayer that food as a basic need will always be available during their life [9].

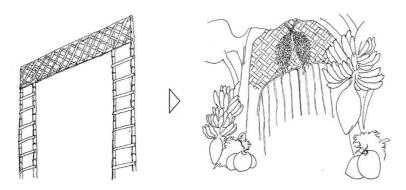


Figure 3.10: Kerun frame and after decoration

After the marriage ceremony, the ritual continues with the *panggih*, or the customary Javanese procession in which the groom and the bride meet. In this meeting ritual, there are two family lines that are composed of the bride and groom flanked by their parents in the first row. The mother of the bride carries *kelud* while escorting her daughter (Figure 3.11). *Kelud* literally means a broom made from *merang* and tied up with various types of leaves; the *kelud* symbolizes cleaning and protecting the bride from bad things such as accident and poverty [11].

The second row of the *panggih* ritual includes a recently newlywed couple, with the man in the groom's line and the woman in the bride's line. This couple is assigned to carry a *kembang mayang* decoration until the groom and bride meet, after which the couple escorts the groom and bride to the *sasono pesinggahan*, or the main stage where the decorations are eventually placed (Figure 3.11). Inside the *kembang mayang* decoration are seven *wuli* made from other various materials such as banana stems, coconut leafs, and areca flowers. The quantity of *wuli* symbolizes guidance from the gods, and the *wuli* themselves symbolize food

prosperity.

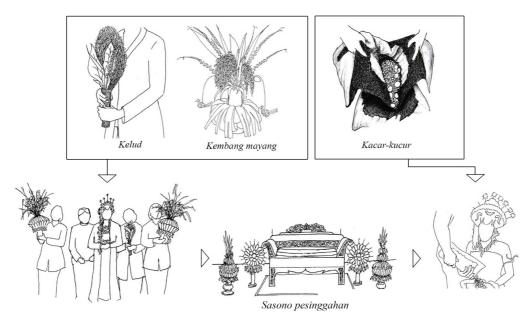


Figure 3.11: Kelud, kembang mayang and kacar kucur in marriage procession

After the groom and bride reach the main stage, *beras* are utilized in a procession called the *kacar-kucur*, or the pouring ritual (Figure 3.11). In this ritual, the groom pours white and yellow *beras* and beans over a *klasa bongko*, or traditional mat. This ritual represents the subsistence the husband will bring to his wife, as the *beras* represent staple foods. Yellow *beras* in this procession represent the hope that the bride will be "*kuning sumringah*," literally meaning yellow bright. In Javanese, to be "yellow bright" is the benchmark of perfect skin, which reflects beauty or handsomeness [9].

c) Banyu londho, nail cleaner and sawur

In rituals for the dead, there are two types of *uborampe*: for *pangrukti layon*, or preparation needs before the corpse is taken to the grave, and for *panguburing layon*, or preparation needs for the burial. During the *pangrukti layon*, *merang* is burned to create *banyu londho*, or water used for bathing the corpse and cleaning the corpse's nails (Figure 3.12). This *nyuceni*, or ritual of cleaning the corpse, is performed by family members of the deceased. The Javanese believe that the cleanliness of the corpse symbolizes the cleanliness of the person from sin and thus their preparation for the last journey to their god. On the way from his or her residence to the burial place (*panguburing layon*), the *sawur* ritual, or the

spreading of yellow *beras* and coins, is performed by the family for the corpse (Figure 3.12). In this context, the *sawur* represents spreading of the family's and attendees' awareness of the spirit by providing supplies for his or her journey to the afterlife [9].

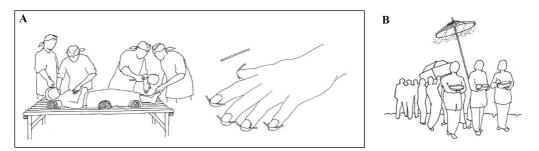


Figure 3.12: Cleaning corpse using *banyu londho* and *merang* (A), sawur procession for corpse

3.6.5 Rituals in Traditional Art Performances

There is one artefact of *wuli* and *beras* in traditional art performance rituals.

a) Wuli and sawur in wayang kulit performances

Wayang kulit, or shadow puppet performances, are not merely entertainment for Javanese but are also for rituals such as the *ruwatan*, or ritual to liberate people from all kinds of bad luck and ill fate in their lives. Sawur is also performed by spreading yellow beras mixed with three kinds of flowers (rose, jasmine, and magnolia) at the beginning of the ritual (Figure 3.13). The sawur is enacted by the dhalang, or puppet master, for the purpose of safety in the process of the ruwatan ritual. For the kelir decoration, which is the screen for the shadow

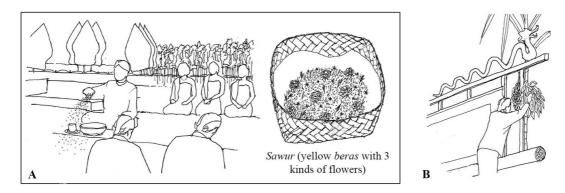


Figure 3.13: Sawur in wayang kulit performance (A), wuli for kelir decoration

puppet performance, a bundle of *wuli* and sugar cane is placed on each side by the *dhalang* (Figure 3.13). The bundle of *wuli* symbolizes *yoni*, or female genitals, and the sugar cane symbolizes *lingga*, or male genitals. Based on Panji stories in Majapahit temple narrative reliefs, Vishnu (Sadhono) symbolizes the sun and water and Dewi Sri symbolizes the earth. In terms of *lingga-yoni*, Vishnu symbolizes the *lingga* element, which represents the water that fertilizes Dewi Sri as *yoni*, or the earth [12].

3.6.6 Royal Family Ritual

There are two artefacts of *wuli* and one type of *beras* in rituals related to royal family rituals.

a) Wuli and beras in wiyosan ritual

Wiyosan literally means birth and in ritual terms, wiyosan is the procession for celebrating the birth of an adipati, which is a prince or head of a region (Figure 3.14). In the first phase of the ritual, a pile of wuli is formed in the shape of a lingga, or a man's genitals, to represent fertility and abundant harvest. Another

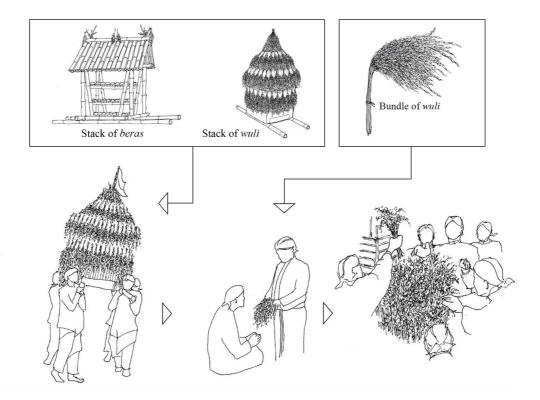


Figure 3.14: Beras and wuli in wiyosan procession

pile is formed from *beras* with red and white colours to also represent fertility. For the Javanese, the colors red and white symbolize the combination of ovum (red) and sperm (white), and therefore the combination of these colors is also a symbol of fertility [9].

After this, the two piles are brought to the palace by the *adipati*'s servants, where the *adipati* selects the best *wuli* and gives it to a representative of the citizens. This ritual symbolizes the *adipati* as the representative of the god who brings the best harvest possible to the villages. At the end of the ritual, which is considered the main event, residents scramble to grab a *wuli*, *beras* or crops from the piles of offerings.

3.6.7 Rituals in Preparation for the Holy Month

There is one utilization of *merang* in rituals regarding preparation for the holy month.

a) Banyu londho in padusan ritual

The word *padusan* comes from the word *adus*, which means to take a bath. In this ritual, the Javanese use *banyu londho*, or water from burned *merang*, to clean their bodies (Figure 3.15). The ritual of *padusan* is performed in the river or spring by all members of society the day before entering Ramadhan month, the holy month for Moslems. The *padusan* ritual begins with a group walking in a single line to a river or spring. Each of the participants carries dry *merang* inside a *tenggok*, or bamboo basket. After the group arrives, all the *merang* is burned together and mixed with water to form a traditional shampoo. The water is then poured over participants' heads by *tetua desa*, and then the act is followed with a prayer. The last part of the procession involves bathing in the river or spring



Figure 3.15: Padusan ritual procession

where the *padusan* ritual was performed. In this ritual, *banyu londho* aims not only to cleanse the body, but also to represent purification of the participants before the holy month begins [9].

3.7 VALUES and PRODUCTION ANALYSIS

The utilization of postharvest rice plant parts in the rituals mentioned above is commonly performed by *abangan*, the group of Javanese who practice the Java religion. Van Ball's theory (1976) suggests that offerings commonly function as a "bribe" s that strengthens the relation between humans and the gods. This "bribe" is given to induce the god to go out of their way to meet the "suppliant's" desires, which are represented by the offerings and ritual acts, as these are also symbols of communication [13]. This theory is in line with the understanding of offerings in Javanese rituals, most of which divide offerings into an input process where the offering acts as an output process for using symbolic artefacts to communicate (Table 3.1).

The input process employs symbols of respect meant to strengthen the practitioner's relationship with the god. There are four requirements of postharvest rice plant parts during an offering procession: carrying of the raw materials, use of the materials to produce artefacts, timing of the rituals, and utilization of artefacts. When taking the raw materials both from a rice field or from storage, the Javanese show their respect to the god by selecting only the best wuli, beras, damen, merang, and bekatul. The person in charge of selecting materials is either a tetua desa, dhukun methik, dhalang or the person who organized the ritual (e.g., the rice field owner, house owner, parents of the bride). When producing an artefact, these persons also have the authority to consider the individuals who will produce artefacts such as construction workers in producing offerings for munggah molo or their neighbor for kerun, jenang tuo, horog-horog. Except for the braided wuli in wiwitan and Sri-Sadhono and kelir decorations, the artefact must be produced by a tetua desa, rice field owner, dukun methik, or the dhalang himself or herself.

When an artefact is produced, it is also a symbol of respect to complete the production without postponement until the next day. Participants may recite a

prayer related to protection and prosperity before producing the artefacts. The quantity of materials in several artefact production processes is also considered a symbolic element. For example, the seven *wuli* in the creation of *kembang mayang* are highly symbolic and the quantity of *wuli* for the braided *wuli* in the *wiwitan* artefact depends on the calculation of *pancawara*.

During utilization of artefacts, practitioners exhibit their respect to the particular god by fulfilling requirements nearly similar to those met when they take raw materials and produce artefacts. But in *ruwatan*, the *sawur* procession is performed by a *dhalang*, or puppet master, because in this ritual he is believed to be the reincarnation of the supreme god who protects his *sukerto*, or his "patients", from a mythological giant. A *tetua desa* is appointed to lead most ritual processions and becomes the person to determine the requirements of ritual. In the Javanese community, elders are considered wise people capable of leading prayers; the Javanese believe that utterances from the elderly are *malati*, or utterances capable of becoming a reality.

In deciding the best time for performing rituals, most of the processions are based on the calculation of *pancawara*, or traditional market days, such as *wiwitan*, *slametan*, *nyajeni*, *munggah molo*, marriage dates and *tedak siten*. In other rituals, such as rituals of *padusan*, time is influenced by the Islamic calendar while for the *wiyosan* ritual, the day is based on the *adipati*'s birthday date. In Javanese time, the change of day occurs at sunset, not midnight, and therefore this timing has also become a requirement in several rituals such as *wiwitan*, Sri-Sadhono, and *wiyosan*.

The output process of an offering employs symbolization using postharvest rice plant artefacts, such as symbols of hope or motivation, reminders about life ethics, and representations of deities. Most of the prayers expressed to the gods involve the bringing the postharvest rice, as the offerings are related to Dewi Sri's characteristics, including prosperity of rice, protection, beauty, generosity, purity and fertility. As a life ethics reminder for Javanese, artefacts such as *horog-horog* and *jenang tuo* are made from *bekatul* or the postharvest rice plant part materials that are categorized as useless by farmers. These artefacts are created to remind the Javanese that *bekatul* is not a useless material, but one created before rice to

 Table 3.1:
 The process of utilization of postharvest rice plant part materials as offerings

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protect it, like an older brother would protect his younger sibling. This reminds the Javanese, in other words, to care for everything in this world. While most *wuli* utilization in rituals represents hope, motivation or the embodiment of deities, *wuli* also remind the Javanese to continuously perform rice agricultural activities to sustain their lives.

Based on the utilization of postharvest rice plant parts, ritual items have a strong relationship with the top part of the postharvest rice plant, with *wuli* as the most utilized part with nine types, *beras* with six types, *merang* with four types and *bekatul* with two types (Figure 3.16, diagram A). The remaining two utilizations employed *damen*, which is the middle part of the rice plant. In the Javanese postharvest experience, *wuli* is the main part and receives special treatment when stored inside the home. Therefore, as an act of "sharing" the harvest with mystical elements, the best-chosen *wuli* part is utilized as offerings to gods to represent their gratefulness. In the Javanese *wiwitan* ritual, a bundle of braided *wuli* is believed to be a form of Dewi Sri body; braided leaves form the hair, *wuli*'s rod forms her neck and grains form her body and legs.

Ritual items are mainly produced through one production process with 10 artefacts such as in the production of kacar-kucur by mixing beras with turmeric, followed by two production processes with seven artefacts such as the production of Sri-Sadhono by bundling and tying wuli. Three production processes is the least implemented in producing ritual artefacts with six items such as in the production of kerun decoration, kelud and kembang mayang by bundling, tying and mixing the wuli part with other plants (Figure 3.16, diagram B). The production processes above mentioned show that producing ritual items is simpler compared to producing utility items because producing ritual artefacts must be made in one day as an act of respect to the god. As we have seen, most of the artefacts are produced through mixing process with 13 artefacts (Figure 3.16, diagram C). For ritual items, the Javanese add other natural materials to represent the diversity of symbolic values of hope through the artefacts. Therefore, in Javanese rituals, most postharvest rice plant ritual artefacts are mixed with other plant parts that have symbolic meanings, such as leaves, stems, and natural dyes from fruits and beans.

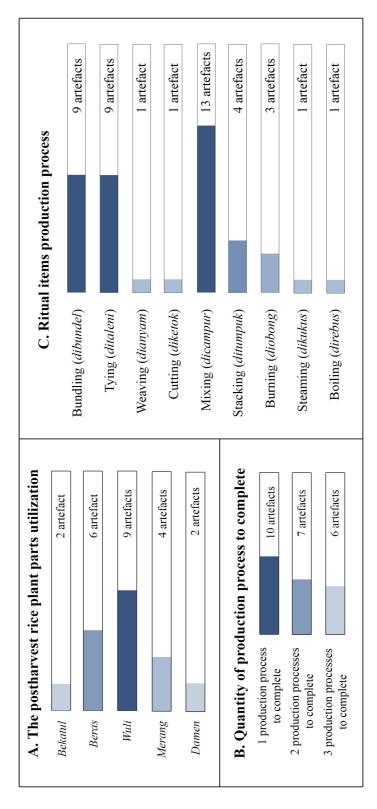


Figure 3.16: Diagram of materials absorption (A), production process (B), and quantity of production process to complete the artefacts (C)

3.8 UTILITY and RITUAL UTILIZATION VALUES

Through the analysis of both values in utility and ritual utilization, rice postharvest artefacts have/had function as a media in Javanese life to connect the Javanese into four elements, which consists of:

a) Individual

Through personal needs, artefacts work as media to fulfill individual's need such as *banyu londho*. In both utility and ritual terms it has function to clean the individual physically or spiritually.

b) Environment

Through strong relation with rice plant as the most abundant natural material available around their living areas, Javanese was sustainably utilized rice plant parts for utility and ritual needs. The rice plant artefacts also became a reflection the concern of Javanese to the importance of the balance of nature such as the utilization of *memeden manuk* (scarecrow) and *bekatul* in *horog-horog* and *jenang tuo* offerings in rituals.

c) Society

There were five society values produced from the utilization of rice

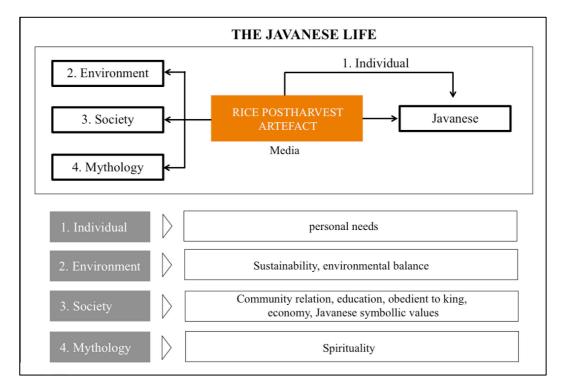


Figure 3.17: The rice postharvest artefacts in Javanese life

postharvest artefacts in utility and rituals. First was gotong royong or mutual cooperation starting with nyambat activity of asking for help to neighbor and work together without expecting rewards to create utility artifacts or preparation for ritual processions. Second was artefacts as education media, such as education gave by parents to their child in wayang damen and wiwitan ritual by inviting children to follow the ritual in effort to make them understand with the rice farming activities. Third was obedient to the king, through the utilization of artefact the Javanese shown their respect to the king's coronation day such as in oser utilization by brushing their house into white and from the participation of the community in following the wiyosan ritual's processions of the king's birthday. Fourth was economy, this values shown by the utilization of wuli as the wage for the farm workers through moro calculation system. In ritual terms, economy as one of hope for prosperity was symbolized through the artefacts in ritual processions such as wuli in munggah molo ritual. Fifth was Javanese symbolical values. This ethnicity identity values were implemented in several artefacts such as the association of Javanese ideal hair color in black color of banyu londo (merang shampoo) and the association of Javanese ideal skin color in yellow color of sawur (yellow beras in rituals).

d) Mythology

In the spirituality relationship with mythological elements, the rice postharvest artefacts became the media in connecting the Javanese to Dewi Sri. It could be seen from the expectations built through the artefacts' utilization. They also trying to "realizing" the form of Dewi Sri and Sadhono through the artefacts. From the utility aspect the spirituality aspect also found in building a thatched roof by providing space called *penuwun* for rituals before installing thatched roof on the roof frame

3.9 The UTILIZATION IN BOTH UTILITY and RITUAL

In utilization aspect, there are five artefacts that utilized both in utility and ritual purposes in three different circumstances. The first is the use of utility after the ritual usage, as can be seen from the use of *kelud* (traditional broom) for cleaning the house as a utility purposes by utilizing *kelud* in marriage processions.

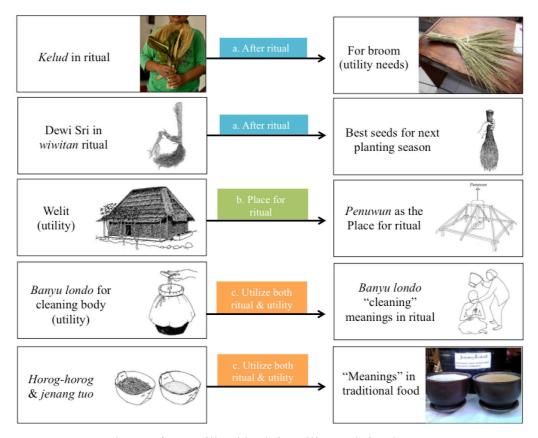


Figure 3.18: The artefacts utilized both in utility and ritual

Another example is when wiwitan ritual is finished, the "Dewi Sri" artefact which produced by selecting the best wuli before rice is harvested, utilized in some villages as rice seeds for the next planting season as the utility purpose. The second is the use of utility artefact by considering area for the ritual utilization which can be seen from the location in roof truss called penuwun or a space for munggah molo ritual or ritual before the thatched roof is raised and installed. The third is utilization both in ritual and utility purposes such as banyu londho (merang shampoo), horog-horog and jenang tuo which also became traditional food in Javanese society and also damen mat which utilized for daily necessity and as a facility for guests in celebrating the big day.

3.10 PRODUCTION PROCESS in UTILITY and RITUAL ITEMS

Based on the classification of the production methods, both utility and ritual artefacts have different characteristics in terms of their production. For utility items, the three production methods that are most utilized in producing artefacts are *ditaleni* (24 artefacts), *dibundel* (24 artefacts), and *ditumpuk* (22 artefacts).

Ritual items are typically made using the process of *dicampur* (14 artefacts), *ditaleni* (9 artefacts), and *dibundel* (9 artefacts). From the utilization of production methods mentioned above, it could be concluded that both in terms of producing utility and ritual items, the *ditaleni* and *dibundel* production methods dominate among the postharvest artefacts (Figure 3.19).

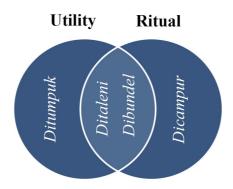


Figure 3.19: The most utilized methods in utility and ritual production process

Notes

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- 2) Based on oral interviews and field surveys with researchers at Institute for Agricultural Technology, Yogyakarta, August 2015.
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- 8) Based on oral interviews with senior farmers in Klaten area, September 2015.
- 9) Based on oral interviews with tetua desa in Klaten area, September 2015.
- 10) Based on oral interviews with head and staff of Javanese Agricultural Museum, August 2015.

- 11) Based on oral interviews with *tetua desa* in Karanganyar area, September 2016.
- 12) Based on oral interviews with humanist and *dhalang* (puppet master) at Minomartani culture hall, August 2015.
- 13) Ball J. Offering, Sacrifice and Gift. Numen vol. 23, Fasc. 3, pp. 161-178, Dec., 1976.

Chapter 4: POST GREEN REVOLUTION RICE CULTIVATION AND POSTHARVEST SCHEME

CHAPTER 4: POST GREEN REVOLUTION RICE CULTIVATION and POSTHARVEST SCHEME

4.1 POSTHARVEST SCHEME AFTER GREEN REVOLUTION

The Green Revolution postharvest scheme was developed to optimize quantity of rice; it therefore involved processing postharvest rice plant materials into *beras* effectively and efficiently, eliminating the non-*beras* waste materials instantly to start a new planting process. After farmers began planting new varieties in 1970, the use of *ani-ani* tools during harvest drastically decreased. The short dimension of new varieties made farmers prefer harvesting rice with sickles (Figure 4.1, no.1). Based on W. Collier's research, harvesting one hectare of a rice field with *ani-ani* requires 200-500 female workers, while the sickle requires only 10-20 workers [1]. Additionally, this new process does not consider the use of non-*beras* materials. Along with new rice varieties which produced short rice plant dimension, the new harvesting method also create dimension of *damen* which already short becomes shorter and difficult to utilize as in traditional postharvest scheme.

After the above-mentioned chopping, the harvested rice plants were inserted directly into plastic sacks (Figure 4.1, no.2) and distributed using pickup cars or trucks (Figure 4.1, no.3) to *selepan* factories, where they were processed into *beras* using huller machines (Figure 4.1, no.4). For small quantities of chopped rice plants, the mobile *selepan*, or huller machine, served farmers by bringing the tools into the rice fields (Figure 4.1, no.5) [2]. This process changed the traditional pounding process, which was once performed among Javanese women, into a new process of using huller machines, which centralized in rice industries and required only three workers per factory. This centralization also changed the distribution scheme of harvested rice from rice fields to houses into *selepan* factories. This condition also creates house no longer serves as storing place for non-*beras* materials such as *damen*, *merang*, *wuli*, *mrambut* and *bekatul*.

After the rice processing phase, postharvest rice plant parts such as *beras*, *damen*, *merang* and *mrambut* were obtained in factory areas or rice fields (the remaining *damen* after harvesting process). The *beras* parts from the hulling



Figure 4.1: Post Green Revolution rice postharvest scheme

process were later distributed as a main commodity product. The other parts, such as *merang*, *mrambut* and *damen*, were burned in rice field or commercialized by farmers as an opportunity to gain income from industries (Figure 4.1, no.6). This absorption non-*beras* materials for industrial needs starting in around 1960 where small medium enterprises and large industries drastically established. In this era, several industries were simultaneously established to provide new materials that were categorized as industrial products and replaced the use of natural resources within communities. For instance: cardboard replaced *damen* as material for *wayang damen*; plastic mats replaced *lemek damen* (mat from *damen*); and clay tiles replaced thatched roofs [3].

4.2 UTILIZATION in POSTHARVEST RICE PLANTS ACTIVITIES

Traditionally there were five postharvest rice plant stages from which parts could be obtained (Table 4.1). The first involved cutting the harvest rice plants in the rice field; two resulting materials—wuli and damen—had 25 uses, both for utility and ritual needs (Figure 4.2). Wuli parts were the main outputs of a harvest, and they were used mostly for rituals such as wiwitan, Sri-Sadhono, and kembang mayang. For rituals, the best wuli were chosen and taken directly from the rice field as a form of respect for the mythical elements. Damen, another material obtained from the second step of cutting the rice harvest, was used mainly for utility items related to rice farming activities; these included thatched roofs around rice fields, irrigation tools, roping materials, pest repellent tools, seeding materials, toys, and more. When it came to rituals, damen was not utilized as a main element, but was used in supporting tools such as mats and incense burning for wiwitan rituals. The second stage was the distribution process, in which damen was obtained for three utilizations, which consisted of tying: untingan into prentilan; creating thatched roofs for gubuk panen as a place for distribution preparation; and tying damen for distribution purposes.

The third stage was the storing process, which occurred after *wuli* and *damen* were distributed to the house. In this phase, *wuli* and *damen* could be used in ten different ways. *Damen* was utilized for housing needs related to exterior purposes such as creating or fixing thatched roofs, and interior items such as traditional

flooring materials and mats. At this stage, wuli also being prepared as seeding material for the next stage of planting. The fourth stage happened after beras processing occurred. In this process, the parts from processed wuli—merang, mrambut, bekatul and beras—were obtained for 24 utilizations. At this point, beras was the main output, and it was utilized not only as a staple food but also as an exchange tool and for several rituals. Merang were employed for various utilities, such as cooking tools, brooms, and self-care tools for such activities as pulling grey hair, arching eyebrows, and making traditional shampoo; the shampoo was made from mixing water with ash obtained from burnt merang. Kelud (brooms) and traditional shampoo were utilized for both physically cleaning the body or home and for several spiritual cleaning rituals. The other parts that could be obtained from this stage are *mrambut* and *bekatul* (rice bran); mrambut was utilized for cooking and self-cleaning tools, while bekatul was used for traditional food, animal feed and certain rituals. The fifth stage was the processing of unused parts from postharvest rice plant activities. In this stage, awul-awul, or broken damen, was utilized for two purposes: for repelling mosquitos around the house area, for which awul-awul was burned in bedian; and for repelling rats in rice fields, for which awul-awul was turned into emposan. The remaining parts were burned in the centre of the rice field.

Table 4.1: The materials utilization based on postharvest scheme

PHASES	TRADITIONAL SCHEME	POST GREEN REVOLUTION SCHEME
Cutting	Wuli & damen	Wuli & damen
Distribution	Damen	
Storing	Wuli & damen	
Processing into beras	Beras, merang, mrambut & bekatul	Damen, merang, beras, mrambut & bekatul
Processing unused parts	Awul-awul (broken damen)	

Postharvest rice plant utilization

In terms of utility needs with the above process, there were three areas in which the Javanese mostly utilized postharvest rice plant materials: the cutting phase, storing phase, and *beras* processing phase. This fact supports the utilization of postharvest rice plant materials for residential and rice farming activity needs, which was established in the first part of this paper. In terms of ritual use, only those materials from the cutting and *beras* processing phase were utilized, because these phases created the highest quality materials. In terms of architecture, the Javanese traditional house was strongly influenced by daily activities as rice farmers. Therefore, in the Javanese traditional house, both *kampung* and *limasan* layout was designed with the *beras* processing area in mind, as well as a storage area for *beras* and non-*beras* materials and area for mythological elements. This condition was supporting the utilization of postharvest rice plant materials in house area both for ritual and utility terms (Figure 4.2).

In contrast, in terms of modern postharvest activities schemes, postharvest rice plant part materials can be obtained after farmers have harvested and processed rice into *beras* using huller machines. Materials from postharvest rice plant parts

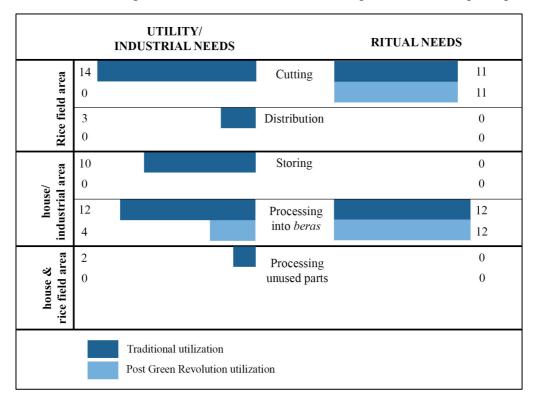


Figure 4.2: The quantity of utilization in utility and ritual needs based on postharvest scheme

are utilized mostly for industrial and ritual purposes (Table 4.1). Beras, as the main output, is collected for rice distribution industries; merang is typically used in mushroom cultivation industries; mrambut and damen is used for burning materials in brick industries (Figure 4.3); and another damen is used for paper industries and cattle feed. The remaining damen, which makes up the highest percentage of materials, is burned by farmers in the rice fields. Some places still use postharvest rice plant materials for traditional Javanese rituals, including kelud, kacar-kucur, kerun, sawur, kembang mayang and munggah molo, but the source of the materials and the production processes do not follow the traditional requirements due to changes in the postharvest culture scheme. In order to obtain wuli parts for rituals, Javanese practice the same traditional procedure of directly taking it from the chopping process. In obtaining parts from the beras processing phase, however, the community currently buys bekatul, beras, damen or merang from selepan factories. In the traditional scheme, these materials were obtained directly after farmers processed beras in their homes.





Figure 4.3: Brick industry (left) and mushroom industry (right)

4.3 PAST and PRESENT UTILIZATION CULTURE ANALYSIS

Through these data findings, this research concludes that, traditionally, the Javanese postharvest rice plant scheme consisted of communal harvest cutting, distribution, storage, *beras* processing, and processing unused rice plants in order to use them for tools and other needs. This culture created a sustainable postharvest scheme by integrating the scheme with other elements of life such as daily needs and community utilization of resources and materials produced from the rice cultivation process (Figure 4.4). The sustainability of the postharvest

scheme allowed a Javanese village to internally maintain its continuity of life by planting rice plants and then using the plants inside the community to meet the village's own needs. Their belief that rice plants were a gift from Dewi Sri, the rice goddess, encouraged Javanese to utilize postharvest rice plants as much as possible. From this perspective, the Javanese showed respect to rice plants by optimally utilizing all parts of the plants and by creating rituals with mythological rules related to rice cultivation and postharvest schemes that sustained the relationship with mythical elements.

Postharvest rice plant schemes after the Green Revolution created an industrialization pattern that gradually eliminated the traditional culture's scheme. This pattern channeled rice postharvest materials—including *beras* as the main output and non-*beras* materials including *damen, merang* and *mrambut*—into industrial sectors for economic value. Villages came to rely on external elements to fulfill their daily needs through industrial products (Figure 4.4) instead of community development. With this new pattern, communities no longer sustained nature through local knowledge.

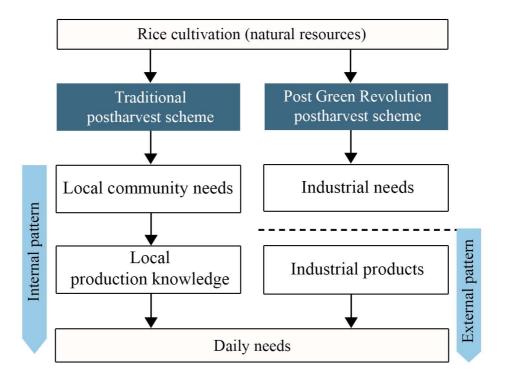


Figure 4.4: The pattern of postharvest scheme with daily needs

The postharvest cultures between the traditional and post-Green Revolution eras have different implications for the Javanese community. In the traditional rice postharvest utilization scheme, there were three relationships formed inside the community: first, the human relationships encouraged inside the community during cooperative creation of artefacts with no expectation of repayment; second, the relationship between the community and the environment developed through the people's sensitivity to identifying and obtaining rice plant parts from the five postharvest activities as materials for their daily needs; and third, the relationship between the community and the artefacts. The forms of utilization of artefacts express the different values of the Javanese, as evidenced when these three relationships changed in the post-Green Revolution era. The process became commercial, and differences of rank emerged (positions similar to boss and worker) in obtaining rice postharvest materials and producing artefacts. The quality of non-beras material produced from new varieties, as well as high demand in production quantity, changed the traditional postharvest scheme and affected the relationship between community and environment. This efficiencyand quantity-based rice farming programme meant the community could not optimally absorb the non-beras materials and resulted in what the Japanese call the 'mottainai' [4], or redundant, behavior of burning the non-beras materials as the simplest way to prepare for new rice farming activities. The presence of industrial items also supplanted the role of traditional artefacts, which had a close relationship with the community through their local values and production processes, and transformed the community into a commercial society with universal interest in commodity items.

Based on analysis in chapter 3, the traditional Javanese postharvest scheme had nine main values which consist of: individual, sustainability, environmental balance, community relation, education, obedient to the king, economy, Javanese symbolical values and spirituality. Today, because of agricultural modernization, the communities are emphasizing economics. This focus has gradually diminished the six other values practiced in traditional postharvest practices. However, based on this thesis, the culture of utilizing the rice postharvest materials in Indonesia, in particular among the Javanese, has been discovered and defined.

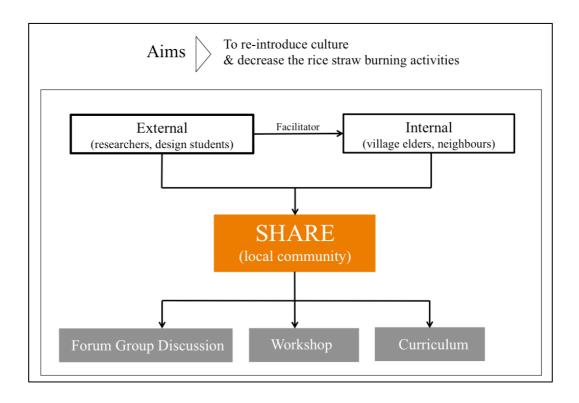


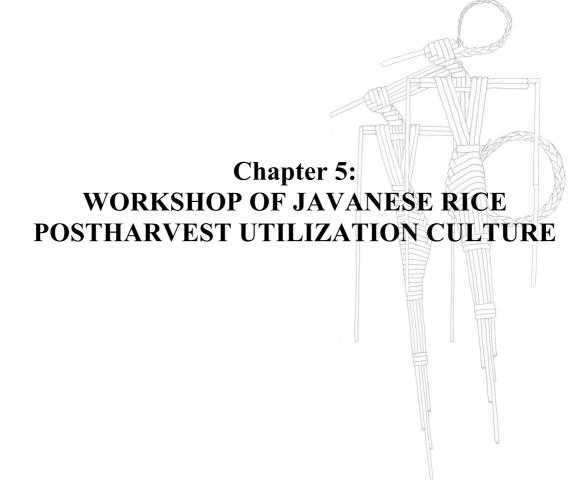
Figure 4.5: Educational approach in re-introduce culture to community

To re-introduce this culture in effort to inform the local community, especially the young generation about the importance of rice post harvest rice utilization culture in Javanese traditional life, the main approach is education to the locals. Most of the rice straw are being burned nowadays, and based on Husnain research, besides produce pollution, burning rice straw activity could not fertilize the soil, otherwise it could eliminates the nutrients in the soil large quantities [5]. Therefore the mission of the educational approach is also to introduce cultural approach to become one of the alternatives for the community in utilizing rice straw which majority are being burned. To facilitate this approach, there are two elements of society that should participate, first is external such as researchers and design students, and internal such as village elders. The position of external should be the facilitator for the internal elements, this activities are planned to avoid external influences in deciding internal needs. As the alternative of methodology, there are three approaches such as Forum Group Discussion (FGD), workshop and curriculum inside Javanese culture education in School. As the first step of introduction phase, workshop was performed as the initial information from research results as well as development experiment based on traditional

methods. Through this workshop, the data related to the students who interested in rice postharvest utilization could be obtained. This is important for the future development participants which could be performed through FGD or another workshop. From workshop in school it could also open the possibilities to organize the next stage workshop or new matery for Javanese culture education which is one of the compulsory subjects in schools in Klaten regency.

Notes

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- 2) Based on oral interviews with senior farmers at Klaten area, September 2015.
- 3) Based on oral interviews with *tetua desa* in Klaten area, September 2015.
- 4) Ueda A., Ooga S. The Culture of "Mottainai" Seen as Symbiosis Between Japan's Ceramic-Producing Regions and the Natural Environment. Bulletin of JSSD Vol.57 No.1, 2010.
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CHAPTER 5: WORKSHOP of JAVANESE RICE POSTHARVEST UTILIZATION CULTURE

5.1 WORKSHOP APPROACH to RE-INTRODUCE CULTURE

Through the workshop, the authors intended to inform the young generation in Klaten regency related to their diversity of rice postharvest utilization culture in order to generate interest and provide solutions to the current utilization of rice straw based on traditional culture. As the approach of the workshop, the indigenous people should be the core of driving force and make people understand what to pass on to their children and how to enjoy their daily life in the given natural environment [1]. Therefore in this workshop, the authors and design students were become the media, facilitator, and supporter for *tetua desa* or village elderly and senior farmers in delivering culture to the young generation.

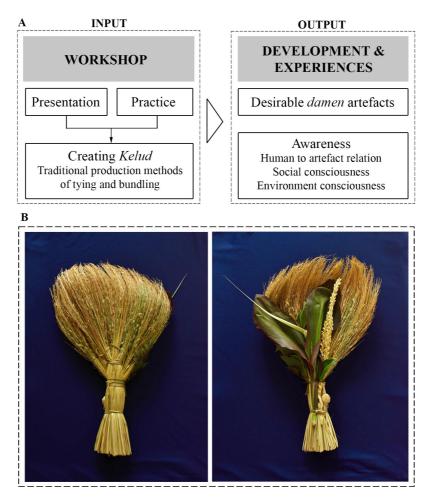


Figure 5.1: Workshop method (A) and *kelud* shape (B)

As an implementation to re-introduce the rice postharvest culture to high school students, the workshop was held with 2 approaches, presentation and practice as an input by experiencing the production process of creating traditional artefact and developing the *damen* design as an output phase (see figure 5.1, A). In the producing the artifact session, Javanese kelud or traditional broom was chosen as the content of the workshop (see figure 5.1, B). Kelud is one of the rice postharvest artefact that utilized as utility and ritual items. From the first and second part of this papers, kelud also representing the most utilized production methods in utility and ritual purpose which are dibundel (bundling) and ditaleni (tying). This production process knowledge could be the base for the students in developing their ideas related to new products. Therefore this workshop also aimed to prove that these two primary methods (bundling and tying) are applicable in developing damen based products. Beside the technical aspect above mentioned, this workshop also referring to "Jinshin no Hana" or "flowering of the total person" concept, which highlights a people approach to artefact with an emphasis on social and ecological consciousness [3] as the experience for students to be achieved in the production process (see figure 5.1, A).

5.2 WORKSHOP LOCATION

Juwiring is one of district inside Klaten regency area with a population of 52.635 person and has potential area for rice planting activities (see figure 5.2, A). As the sample for the workshop activities, SMKN 1 Juwiring (Juwiring 1 Vocational High School) was selected besides as one of High School located in the research area (Klaten area), this school also has the Javanese culture (see figure 5.2, B) and Small Medium Enterprise's craft as the extracurricular options for the students. The high school vision in Javanese culture education also supports the activities related to the culture in every aspect such as art performances and crafts. This workshop also became the first cultural event ever conduct in this high school, which potentially could be continued in the further rice postharvest utilization development programs.

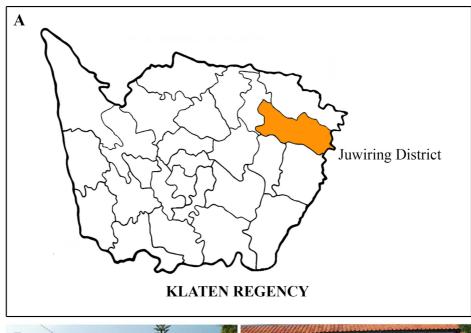




Figure 5.2: Location of Juwiring District (A) and Juwiring 1 vocational high school Building (B), and activities related to Javanese culture (C)

5.3 PREPARATION

The preparation phase was led by the local community such as *tetua desa* and senior farmers. This phase also supported by Sebelas Maret University, Interior Design students as the part of their study related to craft and culture. From the preparation phase, there were 4 activities performed, such as: discussion with *tetua desa*, gathering *merang* and *damen*, tutors' briefing of workshop contents and supporting materials' preparation.

5.3.1 Discussion with Tetua Desa

As the first phase of the workshop preparation, one of the authors met the *tetua desa* in Klaten area. In Javanese community, *tetua desa* or village elder is the elder person and highly respected in a village who trusted to decide and advise

everything from the individual to the village level. He or she also believed by the villagers to lead or open a traditional event. Therefore as the first activity, the author who has relationship with local community asked permission and cooperation to *tetua desa* for presenting the workshop of Javanese rice postharvest culture. Later the discussion related to *kelud* or the artifact that had been chosen as the workshop content in order to protect the authenticity of the production process of the artifacts when the workshop is performed. This meeting also discussed the preparation of *merang* and *damen* materials by selecting the area of rice fields which will be harvested in the near future. This consideration was done in an effort to select the new materials which were the best condition for creating *merang* or *damen* artefacts.



Figure 5.3: Discussion situation with *tetua desa*

5.3.2 Gathering Merang and Damen

To collect the most appropriate *merang* and *damen* to be produced as the artefact, the raw materials were taken straightly after the harvest time and near the time of the workshop was presented. The method of collecting harvested rice plant after Green Revolution until present is not considering the utilization of the non-*beras* materials not same as in the traditional methods. The time and cost efficiency based method is performed by modern farmers by mowing the middle of the rice plant. Therefore the dimension of *merang* and *damen* parts are shorter

than the dimension produced in the traditional method. To produce the appropriate dimension, the harvested rice plant were cut until the bottom part of the plant to obtain the taller dimension. Because of the difficulties in finding the *Rojolele* or *Javanica* variety or the rice plant that majority utilized by Javanese community before Green Revolution which has the appropriate height dimension for utilization with 146-155 cm. While the *Umbul-Umbul* variety was chosen for the workshop raw material because it has the tall height dimension from *indica* or superior variety which presently planted by present farmers with height around 105-110 cm (see figure 5.4, A).



Figure 5.4: Cutting Umbul-Umbul rice plant (A), treshing grain (B), drying damen and merang in frontyard (C), and roof top (D)

In preparing the harvested rice plant into 2 parts (*merang* and *damen*), the author which enganged with the local community experienced the Javanese value of *gotong royong* or community relation value by receiving help from neighbours

in threshing the grain from harvested rice plant without any payment. While working, the villagers also had light discussion related to their daily life which indirectly strengthen ties between neighbors (see figure 5.4, B). This harvested rice later dried under the sunlight and placed at top roof and frontyard (see figure 5.4, C&D).

5.3.3 Tutor's Briefing

In an effort to deliver the workshop content effectively, the design students from Sebelas Maret University (UNS) were invited to support the *tetua desa* as the tutor for each group in the workshop. To prepare the knowledge of each tutor, *tetua desa* taught the design students the step of making *kelud* or traditional

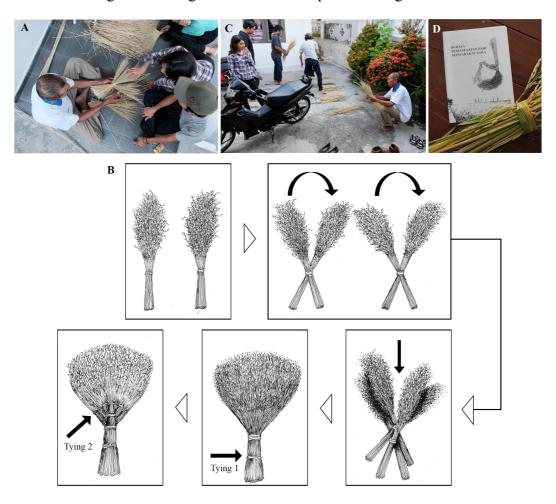


Figure 5.5: *Tetua Desa* sharing the production process of making *kelud* to UNS design students (A), preparing the raw materials for workshop (B), booklet of javanese rice postharvest utilization culture (C), *kelud* producing process tutorial (D)

broom, which basically divided into 5 steps (see figure 5.5, A). Bundling 2 merang separately, each bundle positioned crosswise, merging 2 cross bundle into one bundle, tying the bottom part of bundle and njahit or tying the 'brush' part to form the flat shape (see figure 5.5, B). To avoid injure in producing merang and damen in the workshop, The students also prepared by tetua desa to understand the treatment in facing the materials such as grasping and pulling the damen must be avoided during the production process. The latest part of this preparation part was to prepare the quantity of damen and merang for each group in the workshop (see figure 5.5, C). From this section, the design students were gained the experience of preparing and creating postharvest rice plant artefact which they never did it before.

5.3.4 Workshop's Supporting Materials

As the supporting element for the workshop, booklet was prepared to provide the high school students related to the knowledge of rice postharvest utilization culture (see figure 5.5, D). To collect input data from high school students, the questionnaire also prepared for the workshop.

5.4 WORKSHOP IMPLEMENTATION PROCESS

With reason of effectiveness in delivering the knowledge, this workshop invited a limited number of students with 35 high school students who participate Javanese culture as their extracurricular activity which later divided into 5 groups in practice session. As the demography of the participants, the majority of students were from farmers family background with 77% (27 students), and the rests were from merchant and private employee family backgrounds. From the location of the residents, all (100%) of participants live around Juwiring village of Klaten regency, therefore it was important to share the finding data and knowledge related to rice postharvest utilization culture to the community itself.

In an effort to re-introduce and give the experience of the utilization culture, the workshop was divided into 4 main activities. First, presentation of the findings data related to the rice postharvest rice plant artefacts. Second, preparing *merang* part through traditional harvest method and creating *kelud* or traditional broom as

an example of a traditional artefact. Third, developing *damen* artefacts based on the knowledge from the second session. Fourth, is the questionnaire session for evaluation data from the workshop activities.

5.4.1 Presentation of Findings Artefact

This event was opened by vice principal of Juwiring 1 Vocational High School as an introduction and continued with presentation session. In this presentation, the author was sharing the finding data which started from the origin of rice postharvest utilization culture based on pieces of evidences such as reliefs from old temples, old notes, and visualization by archaeologists. This part continued with the comparison rice variety between *Javanica* (old variety) and *Indica* (new variety) from height and structure tests which was one of the supporting element for the daily needs utilization. Another supporting element also introduced such as: traditional harvest cutting, distributing, storing, and utilizing the unused parts methods. As the result from previous reconstruction and image visualization, the 64 of finding artefacts in outline were introduced to the students as well as the production methods. To support this presentation, booklet also spread as the more detail information related to the finding artefacts and for sharing media after the workshop was finished.



Figure 5.6: Situation of presentation session

5.4.2 Creating *Kelud* (Traditional Broom)

After the presentation, the group was divided into 5 and arranged a circular position of table in each group with aim to create easier communication between group members. The workshop of creating kelud was led by tetua desa and supported by design students as tutor for each group. In this session, firstly tetua desa was teaching the preparation phase to the students related to the method of traditional cutting harvested rice by using ani-ani or cutting tool made from metal, wood, and bamboo (see figure 5.7, A). This phase besides understanding the traditional method, tetua desa also reminding students related to the Javanese value behind the process of *ngani-ani* (utilizing *ani-ani*) such as: patience by choosing rice plant one by one, nature and mythological values by the act of respect in cutting rice plant. After the preparation phase, each group was started to create *kelud* led which following 5 steps of production phases. In this production phase, each of group member was encouraged to give an active role in providing input in making kelud correctly in accordance with the direction of the tetua desa (see figure 5.7, B). After the *kelud* finished, it was utilized by each group to clean their table together as preparation for the next session of the workshop (see figure 5.7, C).

5.4.3 Developing *Damen* Artefact

Based on the knowledge of traditional production methods from the previous session, the students were challenged to create *damen* artefacts from their idea through group discussion. The ideas of artefact purely came from students' desire things related to their daily life needs. This indigenous based development should be considered in order to fulfill the community needs and not to adjust with external elements. In this session, each group member was drawing and suggesting the idea to other group members which later deciding the chosen design from a discussion and considering the production process in realization phase (see figure 5.8, A). As the results, each group had produced several items such as sandal, scope (for cleaning house's floor), toy, doll, decoration and cup holder (see figure 5.8, B). Each creation was presented by each group in front of the class to share their idea background and production process. In group presentation, all of the ideas were reflecting the daily activities in Javanese







Figure 5.7: Cutting harvested rice plant using ani-ani (A), creating kelud (B), cleaning table using kelud (C)



Figure 5.8: Development activities (A), students' creativity results (B)

community in Klaten area, such as: scope was commonly used by community when sweeping the floor traditionally, cup holder was designed for supporting home owner when bringing the glasses to his/her guest, bicycle replica was designed to represent their main transportation, and sandal was representing the footwear that commonly used by community. After this session finished, the last part of this workshop was spreading the questionnaire.

5.5 QUESTIONNAIRE RESULTS

As the feedback from participants, the questionnaire was needed for this workshop. In formulating the question, the key issue is: what do you want to know [2]. Using questionnaire instruments such as: multiple choice, likert scale and qualitative data, the authors want to know about the level of knowledge of young generation in Klaten regency related to their rice postharvest utilization culture, understand the students' sense when touching with *damen* and *merang*, motivation in participating workshop, evaluation of workshop per session, impact after the workshop was performed and interest of culture and future workshop program.

5.5.1 Motivation in Participating Workshop

As the motivation part, participants could select more than one option in multiple choices to represent their interest in this workshop. Based on the result, The majority of students' reasons in participating workshop (with 31 points) were because of interesting in Javanese culture in utilization of rice postharvest materials, followed by filling the free time (with 6 points), interesting with Javanese culture (with 5 points) and willingness to preserve the culture of rice postharvest utilization (with 2 points).

5.5.2 Students Knowledge in Rice Postharvest Artefacts

From the total 64 artefacts, the classification was divided into 2 categories, utility purposes, and ritual purposes. As the result, the majority of artefacts were unrecognized by the students, with 60,1% in utility items and in ritual items was higher with 84,1% from total artefacts (see figure 5.9). The most widely known

utility artefacts for students was *memeden manuk* or scarecrow or tool made from *damen* for repelling birds in the rice field with 80% of students. In ritual artefacts, *kembang mayang* or decoration for marriage procession which utilizing *wuli* as the raw materials counted as the most widely known artefact with 37% of students. While for the most unrecognized utility artefact, the students were majority choose *oser damen* or *damen* brush which utilized for brushing chalk water onto the walls of their homes with 97%. For the ritual items, there are 3 most unrecognized artefacts with 97% which consist of : *merang* shampoo for holy month preparation ritual, *merang* soap for cleaning corpse and for cleaning corpse nail which both for rituals for the dead person.

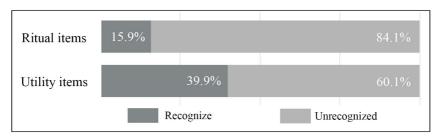


Figure 5.9: The percentage of students' traditional rice postharvest artefacts knowledge

5.5.3 Students' Sense in *Damen* and *Merang* Materials

As the feedback from the activity between students and material, they were asked to fill out questionnaires related to their experience in touching and producing *damen* and *merang*. This questionnaire was using the method of binary opposition in a pair of related terms that are opposite in characteristic to understand the closest characteristics of *damen* and *merang* in students' perspective. In choosing the characteristics, students could choose more than one choice, but not the opposite of the characteristic in the same line that has been chosen. From the questionnaire result, there were no significant differences of materials between *damen* and *merang* (see figure 5.10). From students' experiences in the production process, *damen* characteristics were: rough (14 points), flexible (11 points), tall dimension (15 points) and cause itching (9 points). For *merang* part characteristics were: rough (17 points), flexible (10 points), tall dimension (12 points) and cause itching (10 points).

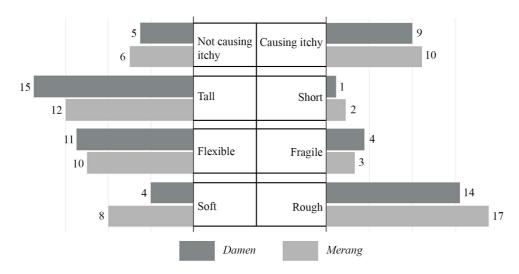


Figure 5.10: Students' analysis related to *damen* and *merang* characteristics based on binary opposition assessment

5.5.4 Workshop Evaluations for Each Session

From 3 main activities in the workshop, students were giving the feedback related to workshop preparations and contents. In an effort to understand the level of satisfaction of the workshop contents, the assessment was divided into two likert scales, satisfied or not, including the reasons. In first session or presentation of findings data, 94% of participants were satisfied with reasons: Just realize that there was the rice postharvest utilization culture and artefacts (9 points), could see the prove of artefacts' shape through sketch in presentation (8 points), understand the history of finding artefacts (3 points), understand the function of each artefacts (2 points) and this is the first experience attended a workshop (1 points). For the unsatisfied reason was because no knowledge related to rice culture and several pictures were unclear (with 1 point) (see figure 5.11, A). From 3 main activities in the workshop, students were giving the feedback related to workshop preparations and contents. In an effort to understand the level of satisfaction of the workshop contents, the assessment was divided into two likert scales, satisfied or not, including the reasons. In first session or presentation of findings data, 94% of participants were satisfied with reasons: Just realize that there was the rice postharvest utilization culture and artefacts (9 points), could see the prove of artefacts' shape through sketch in presentation (8 points), understand the history of finding artefacts (3 points), understand the function of each artefacts (2 points)

and this is the first experience attended a workshop (1 points). For the unsatisfied reason was because no knowledge related to rice culture and several pictures were unclear (with 1 point).

In the second session or *kelud* making workshop, 100% of participants were satisfied with the contents presented. There were several reasons for satisfaction noted in questionnaire which majority was: could learn to create *kelud* directly (18 points), followed by could create *kelud* from the material around living area without purchasing products (5 points), aware that *merang* could be utilized rather than to be burned (2 points), forming the character of patient and cooperativeness between group members in production process (2 points), and the fewest point (1), the reasons were: simple to produce, create interest in producing new items and the first time understand the usefulness of *merang* material.

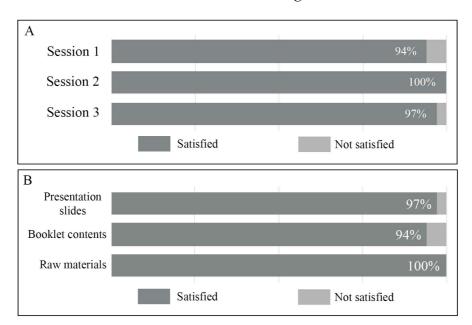


Figure 5.11: Satisfaction level of workshop session contents (A) and preparations (B)

In third session or development of *damen* products, 97% participants were satisfied with reasons: could produce craft directly and support the awareness in utilizing available materials around them (10 points), understand how to develop *damen* product traditionally (9 points), form patient, perseverance and creativeness in production process (3 points), add cohesiveness among students (2 points), and raise willingness in develops *damen* product because of its traditional

values (1 point) (see figure 5.11, B). For the unsatisfied reason, the one reason was due to the lack of idea in the time of producing items. In terms of workshop preparation items, the material of presentation session was rated with 97% of students were satisfied and the unsatisfied reason was an expectation to create a better method in delivering the content of the presentation. For the booklet content, 94% were satisfied while the unsatisfied participants suggested to bring the real objects not only the pictures to in order to bring real experience with the artefacts. The last items to be assessed were workshop raw materials (such as: damen and merang) which all of the participants (100%) were satisfied with the preparation.

5.5.5 Response to the Traditional Rice Postharvest Utilization Culture

After the workshop, most of the students (with 97%) were interested in their culture related to rice postharvest utilization, while the rest was not interesting with this field. The reasons of interest were: the various of utilization postharvest materials culture (13 points), the various of the method in producing postharvest materials (11 points) and various of the function of postharvest materials for daily life needs (3 points). In case if the similar workshop will be held in the same location in the future, most of the students (97%) were showing their interest to join the event, with reasons: to understand more about the utilization and development of rice postharvest rice plant (18 points), to add new experience (4 points), to add knowledge to be shared to others (2 points), could gather and learn together again (1 point). In terms of future development of the rice postharvest culture, 100% of students were interested in engaging with the program. The

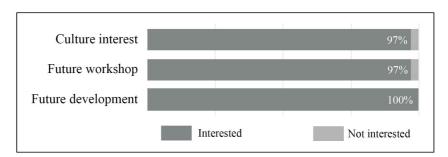


Figure 5.12: Level of interest in culture, future workshop and development programs

reasons of interest were: could develop the *damen* and *merang* as local potencies and beneficial to community (10 points), could decrease the burning rice straw activities (9 points), want to preserve the culture and implement it to the society (3 points), because interesting and unique (3 points), and could make Javanese proud with it (1 points).

5.6 WORKSHOP INPUT and OUTPUT ANALYSIS

As the input for students, these 3 sessions of the workshop consisted of different purpose (see table 5.1). In presentation phase, the main purpose was to become the foundation of knowledge for students related to Javanese rice postharvest utilization culture. In this phase, based on the questionnaire, the results show that students became aware that they have the culture of utilizing rice postharvest materials which very important to become a consideration before they start the second and third sessions.

Table 5.1: Aims and achievements each session of workshop

ION	WORKSHOP AIMS	STUDENTS' OUTPUTS				
PRESENTATI (session 1)	Foundation of basic knowledge	- Understand the basic knowledge of rice post- harvest utilization culture				
MAKING KELUD (session 2)	Foundation of production process	 Experience in touching and analysing characteristics of <i>merang</i> Understand the traditional production process Social interaction 				
DEVELOPING DAMEN (session 3)	Development with culture consideration	 Experience in touching and analysing characteristics of <i>damen</i> Social interaction Environment awareness Proving the applicability of traditional methods in development phase 				

In second phase or producing *kelud*, the main purposes were to become the foundation of traditional production methods in the development phase, to generate social consciousness and environment awareness. Through this session, students were successfully learn the traditional methods by directly producing *kelud* which are tying and bundling. In social awareness, there was human relation value formed in this process, such as cooperativeness between them. While in environment awareness aspect, they become aware with the potential of materials around their living area, and could identify the characteristics of *merang*.

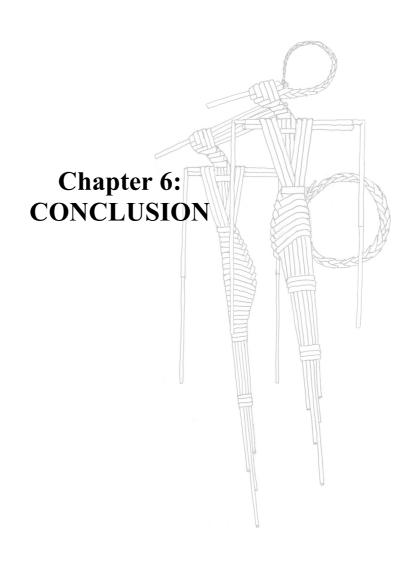
In third phase or developing damen artefact, the main purpose was to prove that the two main traditional methods used in kelud production process are applicable to be the base of artefact development phase. This session also aimed to raise their awareness in developing items through the identification of damen characters, and raise their social consciousness. As the output from thi session activities, same as the second session, by producing damen they became understand with its characteristics. This session also formed their social relation through cooperation and brainstorming in production process. In terms of environment values created from this phase, based on the questionnaire the students were becoming aware in utilizing damen as abundant materials around them. From the production methods aspect, The succeed of students in implementing these two major traditional production methods into they desirable artefacts are proving that these methods are applicable in developing damen or merang artefacts for community's daily needs and also potential to be developed in the future.

Related to their post-workshop responses, it shows that they were majority interest to their culture, and activities for future development and workshop. The majority of interest in rice postharvest utilization culture could possibly because of the participants came from the same background which was Javanese culture as their extracurricular and same living area as well as their family background which are farmers. The reasons related to interest in participating future activities of development and workshop are showing their motivation in preserving culture, sharing knowledge to other people, creating something beneficial to society, decreasing the redundant activities and pollution produced from burning rice

straw activities. This answers reflecting that even though they are "pounded" by the global culture, they actually still have the awareness in social and environment values which are still preserved in Javanese community especially in rural area.

Notes

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CHAPTER 6: CONCLUSION

6.1 FINDINGS CULTURE CONLUSION

Based on the findings of Javanese cultural utilization of the postharvest rice plant, there are several conclusions that can be drawn. Firstly, through this research, it was proved that the Javanese rice postharvest utilization culture was existed and practiced inside the community mainly before the Green Revolution was initiated by the government in 1967. Secondly, as utility items, the materials from postharvest rice plant parts were used to created artefacts mainly for activities related to rice field and the home [1]. From production processes, it could be concluded that Javanese mostly utilized *damen* from postharvest rice plant materials for their utility purposes. They also produced these materials mainly through the process of tying and bundling or stacking the materials to create cover, display, cushion, brush, measuring and burning tools. This process was supported by the *damen* part from the local variety, which has better structure quality through laboratory tests and taller dimension compared to the present superior variety, the majority of which was planted by the community after the Green Revolution.

Thirdly, in an effort to maintain the existence of the community, and beyond performing rice cultivation, the Javanese also rely on the mystical elements that they believe can sustain their life. As a farming community, dependence on rice as a staple food creates a relation to their gods, where postharvest rice plant parts are the ritual elements. The notion of prosperity is attached to the rice plant, which is not only used for agricultural rituals but also other aspects such as life events. Through these ritual processions, rice postharvest artefacts are utilized as a "communication" medium to the gods. In the associations of meaning contained in the artefacts, previously there was an agreement process inside the community; therefore, in ritual terms, there are similar points of view within the community context of translating the values from each of the postharvest rice plant artefacts. In terms of the symbolization of ritual artefacts, Dewi Sri as the highest god in rice agricultural areas is a very influential element in the associations of meaning [2]. As prayers to the god, postharvest rice plant artefacts are created to represent her personality in an effort to obtain the generosity. In other ritual items, Dewi Sri

figures are created as artefacts to bring the god's existence into the community environment.

Fourth, in utilizing rice postharvest artefacts both in utility and ritual terms, there were four values practiced by the Javanese, which consist of: individual values through personal needs, environment values through the sustainability in utilizing rice plant and the awareness of environmental balance, society values through the community relation, educational process, the act of obedient to king, the economical terms and the representation of Javanese symbolic values, and mythological values through the spirituality reflected in utilizing the artefacts especially in ritual terms. These values are in line with the concept of traditional Javanese life which consist of: memayu hayuning bawono means "to beautify the world", memayu hayuning bebrayan means "to beautify the behaviors in human relationships", memayu hayuning pribadi means "physical and emotional personal self-perfection" and believe in Jagad ghoib or believe in the mythological element behind the natural events. Fifth, through the workshop performed in Juwiring 1 Vocational High School in Klaten Regency, it could be concluded that the traditional methods of producing rice postharvest artefacts had been successfully applied by the students in realizing their ideas related to the damen artefacts for their daily needs. This suggests that the traditional methods have the potential to be developed in the future workshop or events.

6.2 FUTURE DEVELOPMENT

Through the motivation shown by all elements in the previous workshop (both preparation and implementation) such as: *tetua desa*, farmers, villagers, high school students, and college students, it is potential to develop "again" the rice postharvest utilization culture inside this community. In realization, the purpose of future development should be aimed to create the local identity and to improve the quality of living through nature [3]. Therefore the local people should play a role in the design aspect. In the development phase, there are two aspects that should be considered such as the foundation of culture and development process. As the foundation of development, supervised by *tetua desa* and senior farmers, the process of re-discovering of rice postharvest utilization culture should be

continued to complete the data about the artefacts as well as its values. In development phase, through workshop or event could be performed to motivate young generation and ask for their participation and ideas of design. In the development process, the local people should be the real designer, and the right design should be returned to locals, not externals. The design experts or researchers as the external elements should be avoided to replace the locals, if this happens then they will lose their decision making regarding their own life.

To preserve locals development, which aiming to improve their quality of life, the external elements are still needed in the development process as assistance to help locals to recognize themselves and stimulus of creativity to solve their design problem. In previous workshop, the students were trying to express and decide their ideas which supported by design students as a giver of stimulus. The samples of idea were illustrated by sketches after the workshop

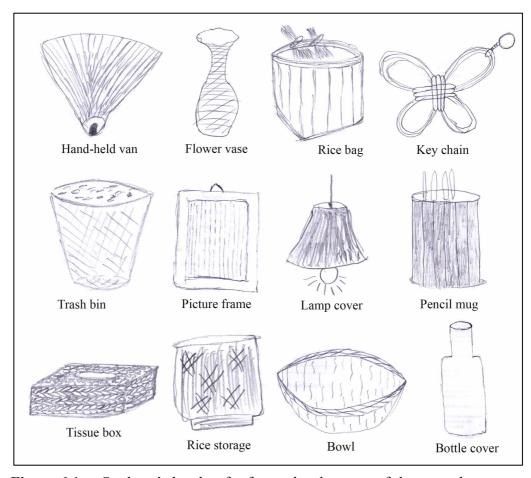


Figure 6.1: Students' sketches for future development of *damen* and *merang* artefacts

(figure 6.1), which were several of their future development ideas for *damen* and *merang* based design. As the development place, based on the experience, the author argue that location inside the local community is the best place to work together and experience the developing artefacts. From these activities, the locals (especially young generation) who engaging with development program will produce artefacts with a supportive environment by experiencing the values of society who lives in the village and could straightly collect the data related to community needs. To sustain the development program, it is important for both internal and external elements to continuously evaluate and control this program. This effort should be perform to avoid the "temporary impact" to the community which usually became the problem in workshop event.

For future finding plan, not only in the Javanese community, but also in all of Indonesia, there are several ethnicities that traditionally have a close relationship with rice farming activities, such as Sundanese and Balinese. This fact could potentially open research related to postharvest rice plant utilization culture in other ethnicities in an effort to reveal the cultural diversity of postharvest rice



Figure 6.2: The diversity of rice postharvest culture in Indonesia and Japan

plant utilization in Indonesia. Globally, the findings of Indonesian rice postharvest utilization culture could complement and support the study of cultural diversity of rice postharvest utilization culture in the world.

6.3 NEXT PROJECT

As described in this thesis, Klaten regency, especially the Delanggu district, has been known for its rice culture since the Java kingdom era. In the postharvest stage of the rice cultivation activity, the Javanese who lived in Delanggu traditionally celebrated this event such as *gojek lesung* or making a music in pounding rice activity, a celebration in *wiwitan* or before harvest ritual and *wayang kulit* or shadow puppet performance with a story of Dewi Sri. After this postharvest celebration, the community continued with the rice postharvest utilization which is described in this thesis. Unfortunately, since the Green Revolution, the celebration is no longer performed and the rice postharvest is utilized only by several elders for ritual purposes. Therefore, the goal of the next plan is to introduce, preserve and develop this postharvest celebration and the utilization culture. This project output also aims to become the cultural centre in the Delanggu district by showing the closeness between the Javanese community in Delanggu and the rice culture.

The implementers of this project are divided into two elements, internal and external. The external element, as the initiator and facilitator of the project, consists of university students and researchers, while the internal element. as the owner and user of the project, consists of Karang Taruna, or the village's young organization, the Delanggu farmers' organization, village elders, schools in the Klaten area, and cultural organizations. This project influences the education, entertainment, and economy of the locals. Education in this project is implemented through a workshop and exhibition of both traditional and developed artefacts. The traditional postharvest activities, such as harvesting and art performance, are also included in the education element and are especially directed towards the young generation. The entertainment aspect includes the experience of traditional cultural activities and art performances which identically reflect those of harvest time. Regarding the economical aspect of this event, a

bazaar is held to benefit the locals economically and to produce funds to sustain this project.

In the realization phase, this project will be divided into three phases. Two preparation phases and the last phase is the main event and planned to be performed at harvest time. Before this project is started, the external and internal elements must meet to coordinate their efforts in order to describe the project plan, determine the person who will be in charge, and provide the input of ideas. This project plan may change in terms of the implementation after that meeting, but basically, the flow will be as planned below:

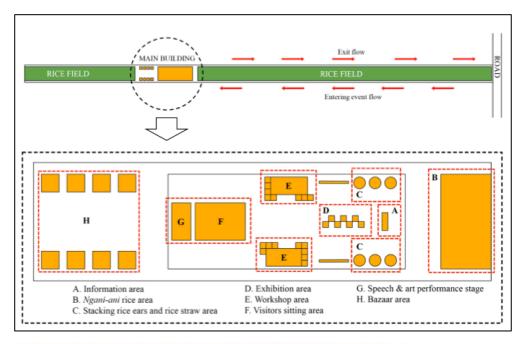
a) Building the event hut and rice straw artefact development

As the base camp for the rice straw artefact development and event location, the rice straw hut is planned to be built in the middle of a rice field which is located in Karangmojo village, Delanggu district, with an area of 300 m x 8 m (figure 6.3). This building will be created by thatched hut craftsmen, high school students and university students, and for rice straw will be supplied by farmers. As the site plan design, the area will be divided into several areas such as the harvest area, the exhibition area, the workshop area, the art performance area and the bazaar area (figure 6.4).



Figure 6.3: Project site plan location

In this phase, besides building the event hut, the design students and high school students who are being supported by the local community will develop a rice straw artefact by analysing the present local needs for the house and the rice field. The result from this development will be showcased and the production



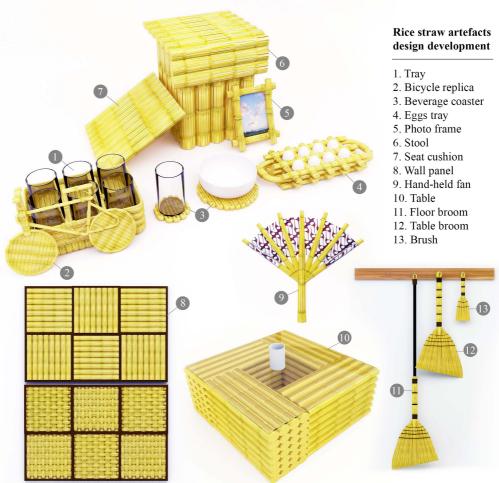


Figure 6.4: Event location layout design (top) and rice straw design development alternative output (bottom)

method will be showed in workshop at the main event to increase the awareness of the local community related to the utilization potency of rice straw.

b) Planting the rice plant and event preparation

Rojolele is the iconic rice variety, the majority of which was planted by the Javanese in the Delanggu district. For the Javanese community, the Rojolele variety produces the best quality rice and rice straw. Unfortunately, nowadays this variety is rarely planted because it takes a longer time to harvest compared to the new varieties. As an effort to preserve the existence of this variety in Delanggu, Rojolele is planned to be planted in this project by using the organic farming method which Javanese farmers had traditionally used in the past. The rice produced from this project will later be packaged with ethnic packaging, and some will be sold at the main event, while the rice straw produced will be used for rethatch the event hut and for the artefact development program. Besides the planting of a local variety of the rice plant, other preparation activities for the event include listing the committees and creating displays, the mat, signage, decorations, and invitations. The invitation for the rice straw design competition will also be prepared to be spread to every school in Klaten area. Finally, the results of these activities will be exhibited in the main event and developed for the next project.



Figure 6.5: Planting Rojolele rice as one of activity in this project

c) Main event

The first task in the main even is to invite the local communities and schools in Klaten regency. There are five kinds of activities offered in this main event:

- a. Traditional harvest cutting rice using *ani-ani* tools, tying the harvested rice using rice straw and placing in *tenggok*, or a traditional bamboo bag, to carry the harvested rice. This activity is performed to preserve the traditional culture and to show the local young generation about the technical and values aspects of this method.
- b. Traditional art performances related to the rice harvest, such as *gojek lesung* and *damen* puppet performances. These traditional forms of entertainment are shown to represent the traditional harvest celebration and to attract visitors.



Figure 6.6: Some of the activities in main event, harvesting rice and selling Rojolele rice (top), *gojek lesung* and *damen* puppet art performance (bottom)

- c. Exhibition of traditional and developed rice straw artefacts produced from the first phase of the project as well as students' creations from the rice straw design competition.
- d. Workshop on how to produce rice straw into developed and traditional artefacts. The rice straw craftsmen from outside Java, such as Japan, will also be invited to this activity to conduct the craft making workshop
- e. designed to show the diversity of the rice straw culture in the world. This workshop becomes the socialization and stimulus for the locals to see how they can utilize rice straw for their daily needs.
- f. Bazaar for the economic input. In this activity, several different products are planned to be sold such, as the postharvest traditional snack, craft items such as rice straw and bamboo artefacts, Rojolele rice packaged with a designed bag, and event souvenirs such as T-shirts, keychains, and stickers. Currency used for the transactions in this bazaar consists of the traditional tools of rice and coconut shells; participants will exchange their money for rice currency at the locket before shopping.

6.3.1 Project timeline schedule

This project's planning details are discussed in the sections that follow.

Table 6.1: Project's timeline schedule

	Activities	Methods	Schedule (months)							
			1	2	3	4	5	6	7	
Phase 1	Coordination between external	Inviting all of the elements, project								
	and internal elements	plan explanation and feedback								
	Building event hut	Building hut by craftsmen and								
		students								
	Developing rice straw artefacts	Performed by design students with								
		locals through analysing local needs							1	
		and traditional methods.								
Phase 2	Planting Rojolele rice	Performed by farmers and students								
	Preparation for main event	Preparation for list of committees,								
		invitations and event design needs							1	
		(signage, mat, display, etc.)								
Phase 3	Performing main event	Harvest, workshop, exhibition, art								
		performance and bazaar								

6.3.2 Project continuity

The plan mentioned above is the beginning phase of this project; therefore, to sustain this activity, the project is to be continued with the similar phases and is planned to be a routine program of the Delanggu region that represents the local characteristics. Basically, the beginning project and the further projects have a similar flow, in the phase of continuing project, in terms of event facilities, the focus is more on rethatching the broken thatched roof part. This project is sustained through local engagement, and in terms of funding, it will be funded from the bazaar and from sponsorship activities.

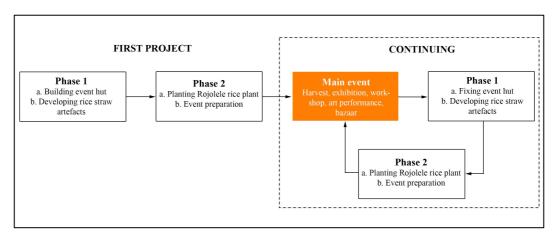


Figure 6.7: Project continuation plan

Notes

- 1. Purwandaru P, Wiyancoko D, Ueda A. *The Culture of Postharvest Rice Plant Utilization for Utility Purposes in Javanese Community : Rice Postharvest Utilization Culture in Indonesia (1)*. Bulletin of JSSD Vol. 63, No. 4, page 59-68, 2016.
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Acknowledgement

Until this research was performed, there was no reference at all related to the rice postharvest utilization culture in the Javanese community of Indonesia. Therefore, this doctoral thesis has been designed to provide insight into the rice postharvest utilization culture in the Javanese community. Through my findings, as a Javanese citizen, it changes my personal perspective of the rice postharvest utilization culture in the Javanese community and makes me realize that this community had this culture just as the Japanese traditional community had. To accomplish this thesis requires several processes, such as discovery, analysis, experiments and workshops whose implementation requires participation from various elements. Therefore, I would first like to express my deepest gratitude to my academic supervisor Professor Akira Ueda, for all of his support, advice, and guidance.

When I first came to Japan, I was still unfamiliar with the study of design culture, because in Indonesia this focus of study does not exist. For me, at least at first, design involved only commodity output and ensuring the product was produced effectively. But through his guidance, he gave me the insight of design culture study, which, in my opinion, is the most important thing to learn before developing a design in a community. In terms of research, he encouraged me to discover the utilization culture of rice postharvest materials in the Javanese traditional community as well as to understand the precious value contained in the artefacts. Also, he always asked about the researcher's interests or passions before they conducted research so that the research process would be performed optimally. Through his guidance, this thesis can be completed; it has also formed my awareness of traditional artefacts as well as of community development through cultural potencies. Design culture as a culture-based analysis design is the science that I consider most suitable for development in Indonesia because of the variety of ethnic groups with different cultures spread across this country. Therefore, this knowledge is very important for me in terms of future research and development of design in Indonesia.

This research could not have been done without support from Bapak Dr. Dudy Wiyancoko, who gave me the opportunity to receive a U to U doctoral study scholarship in Japan. I also owe my gratitude to Monbukagakusho for the doctoral scholarship grant that supported my study in the Design Culture Laboratory of Chiba University until the research was completed and I was able to produce the important findings for Indonesia. In terms of this scholarship, I am also grateful to Mawatari san, who helped me, guided me, and reminded me about administrative matters related to the scholarships.

During the process of the artefacts discovery, I would like to express my gratitude to the *tetua desa* or village elders in Klaten and Karanganyar Regency, Bapak Teguh, Bapak Samidi and Bapak Suhud for their warm welcome and cooperation in the discussion process, including their direction in an effort to visualize and remake the finding artefacts. I am also indebted to Ibu Tri Murtini for her assistance in coordinating our discussions with the village elders. The discovery process was also conducted in the Javanese Agricultural Museum, so gratitude is also addressed to Bapak Jupri and Bapak Kristya Bintara for allowing us to see the museum collections as well as for facilitating discussions with senior farmers and researchers on rice postharvest utilization culture.

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by Borobudur. I am grateful as well to Mas Hari Setyawan, who shared the results of his research and found the potential for the utilization of rice in his research in Borobudur and Prambanan temples' reliefs.

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From the time I first came to Japan, I have learned about many Japanese cultures, especially the Japanese rice straw culture, which was important in broadening my knowledge about the rice postharvest utilization culture. Therefore, I would also express my gratitude to my father in Japan, Shibata san, who has regarded me as family and shared with me his childhood experiences, especially the rice straw utilization in Japan in the past.

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Pandu Purwandaru Chiba, 14 July 2017

Laboratory of Design Culture

Department of Design Science

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Appendix

1. Workshop's Booklet



Pengantar penulis

Jawa berasal dari kata jawawut yang dipercaya merupakan jenis tanaman biji-bijian yang pertama kali ditemukan oleh penghuni pulau Jawa dan menjadi makanan pokok penduduk pulau tersebut hingga saat ini. Didukung oleh kondisi geografisnya, mendukung masyarakat Jawa menjadi komunitas petani berbeda dengan suku lain di Indonesia seperti Bugis dan Melayu yang mayoritas sebagai pelaut. Kondisi tersebut membentuk suatu budaya khusus yang berkaitan dengan aktifitas pertanian dimana secara tradisional masyarakat Jawa mengoptimalkan seluruh material pasca panen padi untuk keseharian mereka. Hal ini dapat dilihat dari berbagai temuan pemanfaatan padi di wilayah Klaten sebagai sampel dari penelitian dengan 41 pemanfaatan dalam lingkup ritual.

Budaya tersebut "hilang" setelah melalui berbagai era, ter-

Budaya tersebut "hilang" setelah melalui berbagai era, terlebih lagi Revolusi Hijau yang digalakkan pemerintah pada tahun 1970 yang membuat padi pasca panen dibagi atas 2 output yaitu beras sebagai komoditas utama dan non-beras (jerami, merang, sekam, dll) sebagai limbah. Lebih lagi dimasa sekarang dengan 62% jerami dibakar petani untuk mempercepat proses penanaman baru membuat masyarakat Jawa saat ini tidak mengetahui bahwa mereka memiliki budaya memanfaatkan seluruh komponen tanaman padi. Oleh karena itu melalui penelitian ini, peneliti mencoba untuk mengumpulkan data berkaitan dengan budaya pemanfaatan tersebut sebagai upaya melestarikan budaya yang dimiliki oleh masyarakat Jawa serta membuktikan bahwa budaya pemanfaatan padi Jawa eksis seperti yang dimiliki oleh masyarakat Jepang, Korea dan China.

Pandu Purwandaru

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1. Pola terbentuknya budaya pemanfaatan padi pasca panen

Budaya pertanian di Jawa membuat masyarakat di pulau Jawa yang sebelumnya nomaden menjadi menetap disuatu lokasi. Dari budaya tersebut membentuk fokus aktifitas di 2 area antara area pertanian dan rumah. Sebagai salah satu material yang berlimpah yang ada disekitarnya, masyarakat Jawa tradisional mengidentifikasi karakter dari jerami, merang, sekam dll untuk diaplikasikan menjadi kebutuhan sehari-hari. Melalui hubungan antar manusia yang kuat masyarakat Jawa saling membantu melalui budaya "nyambat" dalam memanfaatkan material padi pasca panen untuk kebutuhan kesehariannya. Mereka juga menganggap padi sebagai titipan dari Dwi Sri yang membuat masyarakat Jawa mengoptimalisasi seluruh bagian padi untuk kesehariannya dan juga memiliki aturan yang bersifat mitologis ketika berhadapan dengan tanaman terseahut

Di sisi lain, masyarakat Jawa percaya bahwa keberhasilan pertanian tidak hanya semata-mata karena hasil kerja keras mereka, tetapi juga ada unsur mistis yang mendukung aktifitas tersebut. Melalui kombinasi antara animisme Jawa dan juga kepercayaan Hindu akan keberadaan dewa/dewi, lahirlah Dewi Sri sebagai dewi padi. Untuk menjaga hubungan antara masyarakat pertanian dengan Dewi Sri, mereka menggunakan bagian dari tanaman padi sebagai media komunikasi melalui ritual. Hal tersebut diatas mencerminkan bahwa melalui budaya pemanfaatan pasca panen, masyarakat Jawa mempraktekkan hubungan antar komunitas, alam dan elemen mitologis

2. Budaya dalam catatan peninggalan sejarah

Catatan China tercatat rakyat jelata di era Majapahit (1293-1500) menggunakan jerami sebagai atap rumahnya. Batu bata merah di era tersebut juga menggunakan merang sebagai bahan campurannya (A). Di relief candi Borobudur, masyarakat Jawa menggunakan jerami untuk membuat gerabah (B) dan juga sebagai emposan (jerami dibakar untuk mengusir hama tikus) (C). Di candi Cabean Kunti, dapat dilihat metode tradisional memasak orang Jawa dengan menggunakan anglo yang memanfaatkan merang sebagai alat untuk membakar kayu (D). Dan dari kakawin Ramayana tertulis "daluwan wedihaya" yang memiliki arti pakaian dari jerami (E). Sementara untuk penggunaan ritual, beras dengan warna merah dan putih ditemukan tahun 2006 di area candi Prambanan di dalam peripih dan dipercaya sebagai elemen ritual (F). Dari kakawin Ramayana tertulis "kumba kuçägra wretti wĕtih" yang diartikan sebagai gabah yang digoreng tanpa minyak yang digunakan untuk sesajen untuk kesela



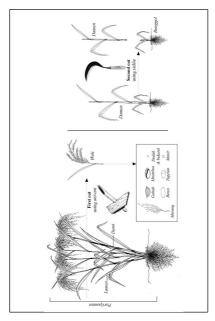
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3. Dewi Sri dan budaya pemanfaatan padi

Dewi Sri merupakan Dewi tertinggi pertanian padi dan memiliki pengaruh kuat bagi masyarakat Jawa. Selain sebagai Dewi padi, masyarakat Jawa juga menganggap Dewi Sri sebagai simbol kesuburan, perlindungan, kecantikan, kesejahteraan, kesucian dan kedermawanan. Dalam pemanfaatan padi pasca panen masyarakat Jawa percaya bahwa Dewi Sri menitipkan padi untuk kekuatan (beras sebagai makanan pokok), perlindungan (jerami untuk atap), kebersihan (merang untuk sapu dan sampo), dan berbagai kegunaan lainnya. Sementara dari aspek ritual, bagian tanaman padi yang digunakan untuk ritual mengandung makna karakter dari Dewi Sri yang digunakan sebagai media komunikasi ritual.



4. Pembagian tanaman padi

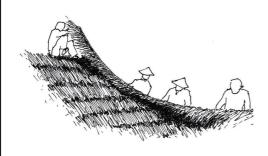


5. Pemanfaatan untuk kebutuhan utiliter

Kebutuhan utiliter adalah kebutuhan akan alat untuk menunjang aktifitas keseharian masyarakat Jawa. Dalam pemanfaatan material padi pasca panen terdapat 4 area pemanfaatan antara lain:

- 1. Area rumal
- 2. Area sawah
- 3. Area rumah dan sawah
- 4. Diluar area rumah dan sawah

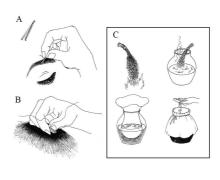
Untuk kebutuhan utiliter, masyarakat Jawa mayoritas menggunakan bagian jerami (28 penggunaan) dan merang (9 penggunaan)



a. Alat untuk membersihkan diri

(A) Alat untuk merapihkan alis dibuat dari merang atau sekam. (B) Alat untuk mencabut uban dibuat dari merang atau sekam. (C) Banyu londho atau sampo merang dibuat dari

merang yang dibakar kemudian dicampur air dan disaring.
Untuk alat A dan B dipergunakan selain untuk membersihkan diri, juga untuk mempererat hubungan para Ibu di desa melalui proses saling membantu mencabut alis atau uban berbarengan dengan berdiskusi membicarakan berbagai hal.



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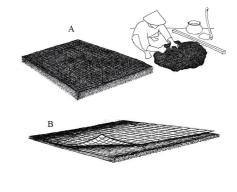
b. Atap di lingkungan rumah

Dengan karakter tanaman padi dari varietas lokal yang memiliki dimensi antara 120 cm - 180 cm memungkinkan jeraminya untuk diaplikasikan menjadi berbagai atap dilingkungan tradisional Jawa rumah antara lain : (A) atap kampung untuk rumah, (B) atap limasan untuk rumah, (C) atap untuk lumbung padi, (D) atap untuk kandang kerbau, (E) atap untuk gerobak tradisional, (F) atap panggang pe untuk tempat penyimpanan kayu bakar dan menjemur daun teh, (G) atap njlangkringan atau tempat penyimpanan jerami.



c. Material untuk lantai

Jerami digunakan sebagai material pengikat untuk tanah liat dalam pembuatan lantai tradisional atau jerambah (A). Sebagai alas tikar, untuk memberikan kenyamanan masyarakat Jawa tradisional ketika duduk dilantai, mereka menggunakan tumpukan jerami yang pada bagian atasnya dilapisi oleh tikar pandan (B).

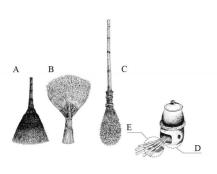


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d. Sapu dan alat masak

Dengan karakter material yang halus, merang digunakan sebagai material untuk membuat sapu yang terdiri dari 3 jenis, antara lain : (A) sapu lantai, (B) sapu meja dan amben, (C) sapu untuk langit-langit.

Dengan karakter material yang mudah dibakar, merang juga digunakan oleh masyarakat Jawa tradisional untuk membakar kayu di anglo atau alat tradisional untuk memasak (D), dan sekam digunakan untuk menumpuk kayu bakar (E).



e. Pembibitan padi dan ternak

Terdapat 2 lokasi dimana masyarakat Jawa melakukan pemibitan tanaman padi, yaitu di rumah dan di sawah. Di rumah, biasanya pembibitan dilakukan dihalaman rumah dengan menumpuk bundel padi dengan ditutup oleh jerami sebagai pelembab hingga bibit padi muncul (A). Sebagai alat untuk beternak ayam, merang digunakan sebagai petarangan atau tempat untuk ayam mengerami telurnya (B).





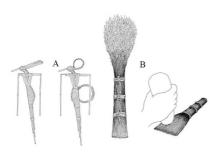
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f. Oser dan wayang damen

Oser atau kuas dibuat dengan menggunakan material jerami yang ditumbuk dan dihaluskan atau merang. Oser digunakan untuk menguas air kapur ke tembok rumah yang jaman dahulu terbuat dari bambu dengan tujuan terlihat bersih, agar terang ketika malam tiba (karena tidak ada lampu dimasa lalu) dan ketika maiam uba (karena udak ada iampu dimasa iaitu) dan ketika menyambut hari besar. Oser juga digunakan dilingkun-gan pertanian untuk menyebarkan air tembakau ke tanaman padi untuk mengusir hama (A).

Anak-anak petani untuk membuat mainan wayang damen dari jerami yang digunakan untuk mengisir waktu luang ketika

membantu orangtuanya bertani disawah (B).



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g. Alat irigasi dan pembibitan

Sebagai alat irigasi pertanian, jerami digunakan untuk membuat bendungan yang bertujuan untuk menaikkan level air sal-uran air sekunder untuk mengairi sawah (A). Ketika air sudah dianggap cukup, jerami juga digunakan untuk menyumbat saluran air (B).

Sebagai material untuk pembibitan, sewaktu panen wuli dengan kualitas terbaik dikumpulkan untuk menjadi bibit dengan kuantas terbaik dikumpunkan untuk menjadi bibit dalam masa tanam selanjutnya (C). Aktifitas pemilihan bibit terbaik disebut dengan nggrontongi. Untuk aktifitas penyemaian bibit, jerami juga digunakan untuk menutup benih padi untuk melindungi dari burung, serangga, air (D).





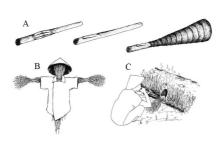




h. Dramenan dan pengusir hama

Untuk mengisi waktu lenggang dan menunggu hama burung datang ke sawah (tunggu manuk), anak-anak petani membuat mainan dramenan yang dimainkan dengan cara ditiup (A). Mainan ini juga dimainkan ketika masa panen tiba sebagai rasa svukur kenada Dewi Sri.

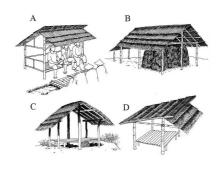
syukur kepada Dewi Sri.
Sebagai alat pengusir hama, petani tradisional jawa memanfaatkan jerami untuk memeden sawah (B) dan juga emposan dengan cara dicampur sulfur dan kemudian dibakar dilubang tikus (C).



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i. Atap di lingkungan sawah

Dilingkungan pertanian, secara tradisional atap jerami digunakan untuk beberapa gubuk, antara lain: atap gubuk cangkruk yang digunakan para petani untuk mendiskusikan perkembangan aktifitas pertanian (A), gubuk panen yang digunakan untuk menyimpan hasil panen sebelum di distribusikan ke rumah atau lumbung padi (B), gubuk damen atau tempat petani mengontrol sawah terdapat 2 desain yaitu dengan atap kampung (C) dan atap panggang pe (D).

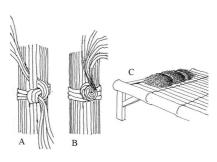


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j. Material tali dan bantal

Untuk aktifitas pasca panen, jerami digunakan petani tradisional untuk mengikat wuli dan juga jerami. Untuk mengikat wuli, metode ikat unting digunakan untuk menyatukan wuli menjadi satu bundel atau sa'unting (A). Untuk mengikat 3-5 unting padi menjadi satu bundel dan juga mengikat satu bundel jerami atau merang, petani menggunakan metode ikat plintiran (B).

Sebagai alat untuk beristirahat petani, merang yang memiliki karakter halus ditumpuk dan diikat menjadi bantal atau lebih dikenal dengan bantal merang (C).

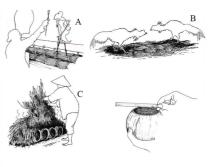


k. Pemanfaatan diluar area pertanian dan rumah

Dalam kegiatan seni tradisional wayang kulit, selain menggunakan gedebok pisang, jerami yang dibundel juga digunakan sebagai display untuk menancapkan wayang kulit (A). Sebagai sarana penunjang permainan tradisional adu ayam, jerami ditumpuk sebagai arena pertandingan (B). Dalam proses pengerasan gerabah, metode tradisional menggunakan jerami yang ditumpuk dan dibakar (C).

Sebagai alat tukar, beras dengan nilai intrinsiknya menjadi

Sebagai alat tukar, beras dengan nilai intrinsiknya menjadi alat tukar untuk pemenuhan pebutuhan pokok lainnya melalui proses tukar-menukar dengan menggunakan alat ukur bernama beruk yang terbuat dari batok kelapa (D).



6. Pemanfaatan untuk kebutuhan ritual

Dalam kebutuhan ritual, tanaman padi digunakan sebagai media komunikasi kepada elemen mistis dengan lingkup ritual antara lain :

- 1. Ritual di rumah dan sawah
- 2. Ritual di sawah
- Ritual di rumah
 Ritual berkaitan dengan fase manusia
- 5. Ritual dalam seni tradisional 6. Ritual dalam lingkungan keluarga kerajaan
- 7. Ritual menyambut hari besar

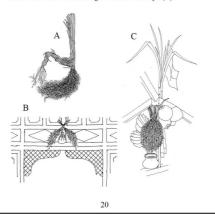
Untuk kebutuhan ritual, masyarakat Jawa mayoritas menggunakan bagian wuli (9 penggunaan) dan beras (6 penggu-



a. Ritual di rumah dan sawah

Ritual wiwitan dilakukan dengan menggunakan wuli yang di bundel dan dikepang (A). Ritual ini dilakukan di sawah sebelum memanen dan setelahnya kepangan wuli tersebut dibawa ke rumah. Di lingkungan rumah setelah ritual wiwitan selesai dilakukan, didepan ruangan senthong tengah atau lumbung padi diletakkan 2 bundel wuli yang diikat yang dinamakan Sri-Sadhono (B).

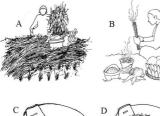
Ketika membangun rumah, sebelum memasang atap biasanya dilakukan ritual bernama munggah molo dengan beberapa bundel wuli dan beras sebagai elemen ritualnya (C).



b. Ritual di sawah

Dalam ritual wiwitan yang dilakukan di sawah, jerami dipergunakan sebagai alat pendukung ritual seperti sebagai alas duduk (A) dan juga dibundel untuk membakar kemenyan (B).

Pada ritual nyajeni yang dilakukan sebelum membajak sawah bekatul rebus untuk membuat jenang tuo sebagai salah satu elemen sesajen (C) dan pada ritual slametan yang diadakan sebelum menanap padi, bekatul dikukus untuk membuat horog-horog sebagai elemen sesajen (D).

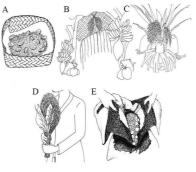


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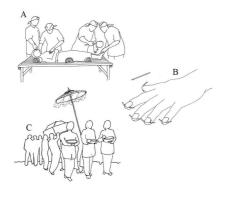
c. Ritual fase manusia (bayi dan pernikahan)

Material pasca panen padi digunakan untuk ritual berkaitan dengan fase manusia, seperti pada masa balita ketika bayi sudah mulai belajar berjalan (usia 7-8 bulan) beras yang dicampur dengan kunyit digunakan dalam ritual tedak siten (A). Dalam fase pernikahan sepasang bundel dari wuli digunakan sebagai elemen dekorasi dari kerun (dekorasi pra-nikah)
(B). Dalam pemanfaatan selanjutnya di prosesi panggih dimana pengantin pria dan wanita dipertemukan, barisan pengantar pengantin membawa dekorasi bernama kembang mayang yang menggunakan wuli (C). Ibu dari pengantin wanita membawa kelud (D). Setelah pengantin duduk di sasono pesinggahan beras digunakan dalam prosesi kacar-kucur (E)



d. Ritual fase manusia (kematian)

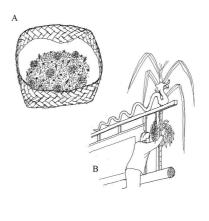
Dalam upaya membersihkan secara jasmani dan ruhani orang yang meninggal, pada tahap persiapan banyu londho (A) dan potongan kecil merang (B) digunakan untuk membersihkan tubuh jenazah. Kedua alati ni masuk kedalam kategori uborampe pangrukti layon (uborampe sebelum jenazah dibawa ke liang lahat). Sementara sawur (beras dicampur dengan kunyit) digunakan untuk mengawal jenazah hingga liang lahat (C).



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e. Ritual dalam seni tradisional

Dalam seni pertunjukan tradisional, material pasca panen padi seperti beras dan wuli digunakan untuk pertunjukan wayang kulit khususnya di acara khusus seperti ruwatan. Sawur (beras dicampur dengan kunyit) disebar oleh dalang sebagai ritual pembuka pertunjukkan wayang (A.) Dan pada dekorasi kelir (layar wayang kulit) satu bundel dari wuli dan tebu dipasang sebagai representasi Dewi Sri dan Sadhono (B).

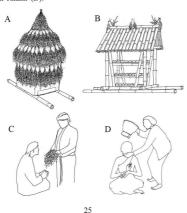


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f. Ritual dalam lingkungan kerajaan dan menyambut bulan suci

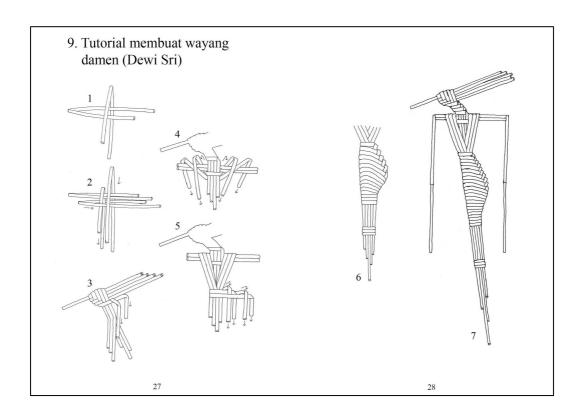
Di lingkungan kerajaan untuk merayakan hari ulang tahun adipati diadakan acara wiyosan dengan menggunakan wuli dan beras sebagai elemen ritual. Tumpukkan wuli dengan ditumpuk seperti gunung (A) serta tumpukan beras dengan warna merah dan putih yang diletakkan di tandu beratapkan bambu (B) dibawa ke rumah joglo adipati. Di tempat tersebut adipati menyerahkan satu bundel wuli terbaik kepada salah satu representasi rakyat (C).

Dalam ritual padusan (menyambut bulan suci Ramadhan) banyu londho dipergunakan sebagai alat pembersih jasmani dan ruhani (D).



8. Metode produksi





Ucapan terimakasih

Atas tersusunnya booklet ini, peneliti ingin mengucapkan terimakasih setinggi-tingginya kepada :

Prof. Akira Ueda

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Budaya Pemanfaatan Padi Masyarakat Jawa

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Dilarang memperbanyak booklet ini tanpa seizin pihak penulis

2. Workshop's questionnaire

WORKSHOP BUDAYA PASCA PANEN PADI MASYARAKAT JAWA

Juwiring Vocational High School 1, Klaten Regency, Central Java, Indonesia & Design Culture unit, Faculty of Engineering, Chiba University, Chiba Prefecture, Japan

1. IDE	NTITAS RESPONDEN	
a.	Nama :	
b.	Usia : tahun	
c.	Jenis kelamin : laki-laki/perempuan	(coret yang tidak perlu)
d.	Siswa/i kelas :	
e.	Pekerjaan diluar sekolah (bila ada):	
	Alamat rumah:	
g.	Email/HP:/	
_	Pekerjaan orangtua :	

2. PENGETAHUAN ARTIFAK

Berilah tanda (✓) untuk artifak yang ada ketahui :

ARTIFAK UTILITER

NAMA ARTIFAK	PENGETAHUAN T	ENTANG ARTIFAK
	Mengetahui	Tidak mengetahui
Cabut uban dan perapih alis		
2. Banyu londho		
3. Lemek damen		
4. Jerambah		
5. Atap gerobak sapi/kerbau		
6. Atap kandang kerbau		
7.		
8. Atap rumah kampung		

	NAMA ARTIFAK	PENGETAHUAN TI	ENTANG ARTIFAK
		Mengetahui	Tidak mengetahui
9.	Atap njlangkringan		
10.	Atap panggang pe		
11.	Atap lumbung pari		
12.	Atap panggang pe		
13.	Kelud merang (Iantai)		
14.	Kelud merang (amben)		
15.	Kelud merang (langit-langit)		
16.	Urup-urup —		
17.	Ganjelan kayu bakar		
18.	Petarangan		
19.	Penutup & pelembab bibit padi		
20.	Oser merang		
21.	Oser damen		

	NAMA ARTIFAK	PENGETAHUAN T	ENTANG ARTIFAK
		Mengetahui	Tidak mengetahui
22.	Wayang damen		
23.	Bendungan damen		
24.			
26.	Pelindung bibit padi		
27.	Memeden manuk		
28.	Emposan		
29.	Dramenan		
30.	Ikat untingan		
31.	Ikat plintiran		
32.	Atap gubuk damen (panggang pe)		
33.	Atap gubuk damen (kampung)		
34.	Atap gubuk cangkruk (panggang pe)		

	NAMA ARTIFAK		PENGETAHUAN T	ENTANG ARTIFAK
			Mengetahui	Tidak mengetahui
35.		Atap gubuk panen (kampung)		
36.		Bantal merang		
37.	U	Intingan padi ebagai upah buruh		
38.	Must Company	Alas adu ayam		
39.		Tuncepan wayang dari jerami		
40.	mp	Jerami untuk membakar terbikar		
41.		Beras dan beruk		

ARTIFAK RITUAL

1.	Horog-horog	
2.	Jenang tuo	
3.	Dewi Sri dalam wiwitan	

	NAMA ARTIFAK	PENGETAHUAN	TENTANG ARTIFAK
		Mengetahui	Tidak mengetahui
4.	Bakar jerami dalam wiwitan		
5.	Alas damen ritual wiwitan		
6.	Sri-Sadhono		
7.	Sri-Sadhono dengan bagor		
8.	Padi di munggah molo		
9.	Beras pada munggah molo		
10.	Sawur tedak siten		
11.	Kerun		
12.	Beras kacar-kucur		
13.	Kembang mayang		
14.	Kelud nikahan		

	NAMA ARTIFAK	PENGETAHUAN TE	ENTANG ARTIFAK
		Mengetahui	Tidak mengetahui
15.	Banyu londho untuk memandikan jenazah		
16.	Merang untuk membersihkan jari jenazah		
17.	Sawur untuk jenazah		
18.	Padi disisi kelir		
19.	Sawur wayang kulit		
20.	Tumpukkan beras merah dan putih di wiyosan		
21.	Gunungan padi ritual wiyosan		
22.	Untingan padi di prosesi ritual wiyosan		
23.	Banyu londho di ritual padusan		

	3. KREASI DESAIN PRODUK PADI PASCA PANEN (JERAMI, MERANG, DLL) Gambarkan 2 sketsa dari potensi pengembangan produk untuk kebutuhan sehari-hari saat ini (di rumah, sawah, tempat kerja, dll) dari potensi budaya	
pemanfaatan material pasca panen padi (jerami, bekatul, merang, sekan wuli, beras) yang kita miliki, bisa menggunakan satu material atau mi		
	material dan tidak dibatasi seperti workshop sesi 3. Sangat dianjurkan untuk menambahkan detail tulisan sebagai informasi penunjang	

4. KETERTARIKAN BUDAYA DAN EVALUASI

a.	-	a motivasi anda dalam mengikuti budaya utilisasi material pasca nen padi masyarakat Jawa ? (bisa dicontreng lebih dari satu) Karena tertarik dengan budaya Jawa
		Karena tertarik dengan budaya Jawa dalam memanfaatkan material padi pasca panen
		Karena tertarik dengan budaya pertanian padi Jawa
		Mengisi waktu luang
		Alasan lainnya:
b.	Pei	rnahkan mengikuti workshop budaya pasca panen padi sebelumnya?
		pernah
	Ap	abila pernah, tolong disebutkan lokasi dan nama acara seingat anda :
c.		elah workshop ini pengetahuan apa yang anda peroleh?
		sa dicontreng lebih dari satu)
		Pengetahuan bahwa masyarakat Jawa memiliki budaya pemanfaatan
		padi pasca panen yang variatif untuk kesehariannya, bukan hanya
		dibakar atau pakan ternak
		Pengetahuan tentang nilai budaya pemanfaatan material pasca
		panen padi
		Pengetahuan tentang teknik produksi artifak jerami secara
	_	tradisional
		Pengetahuan tentang karakter material jerami dan merang (mudah ditekuk, dll)
		Pengetahuan tentang metode tradisional pembagian tanaman padi
		menjadi jerami, wuli, merang
		Memahami potensi pemanfaatan jerami untuk dikembangkan di
		aktifitas keseharian (contoh tempat pensil, dll)
		Tidak mendapat ilmu sama sekali
	П	ridak mendapat ililid sama sekan
d.	bag	lam aktifitas workshop pembuatan kelud dan produk jerami gaimana menurut anda mengenai karakter material merang dan jerami sebut?

Ka	rak	ter material merang (silahk	can untuk mencontreng lebih dari satu)
		Lembut		Kasar
		Lentur		Getas
		Panjang		Pendek
		Tidak gatal		Menyebabkan gatal
		Lainnya:		
Ka	rak	ter material jerami (s	ilahka	in untuk mencontreng lebih dari satu)
		Lembut		Kasar
		Lentur		Getas
		Panjang		Pendek
		Tidak gatal		Menyebabkan gatal
		Lainnya:		
e.	ma	isyarakat Jawa khususn	ya Kla	aya pasca panen padi yang dimiliki nten? Tidak menarik
f.	Re	spon anda terhadap ko	nten v	vorkshop
1.	Ko	nten workshop budaya	pema	anfaatan material padi pasca panen secara
	kes	seluruhan?		
		Menarik		Tidak menarik
	Ala	asan:		
2.	Ko	nten sesi pertama (per	sentas	si artifak temuan)
		Menarik		Tidak menarik
	Ala	asan :		
3.	Ко	nten sesi kedua (works	hop p	embuatan kelud)

	□ Menarik Alasan :		Tidak menarik
4.	Konten sesi ketiga (pengem □ Menarik Alasan :	ıban	Tidak menarik
g. 1.		_	
	. .		Kurang memuaskan
			Kurang memuaskan
Ap pe:	□ Sangat baik pabila anda memiliki saran u erlu ditingkatkan mohon di tu	□ untu lis :	Kurang memuaskan ik kelengkapan peralatan workshop yang
h.	padi yang dimiliki oleh mas Berminat Alasan:	yara	terhadap budaya pemanfaatan material akat Jawa setelah workshop ini? Tidak berminat
j.	Apakah anda berminat apal Berminat Alasan:	oila v	workshop serupa kembali diadakan ? Tidak berminat

Terimakasih banyak untuk partisipasi teman-teman dalam mengisi angket budaya pasca panen masyarakat Jawa. Semoga budaya luhur yang kita miliki dapat tetap lestari.

3. Research activities



(C), reconstruction of the artefact (D), learning rice straw tying method from senior farmer (E)



from village elder (E)

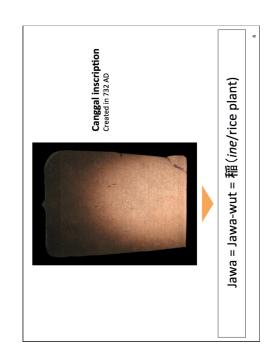
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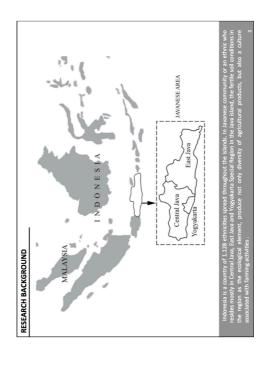
Discussion with Javanese culture researcher from Sebelas Maret University (A), discussion with humanist from Minomartani Cultural Hall (B), rice straw structure quality tests in laboratory of mathematics and natural sciences Sebelas Maret University (C & D), searching the origin of rice postharvest culture in reliefs of Borobudur temple (E)

4. Presentation slides

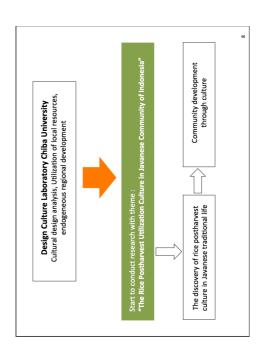


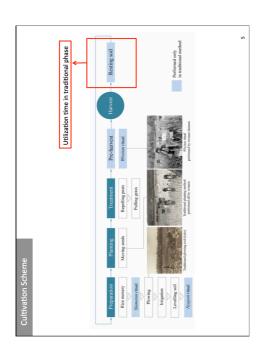




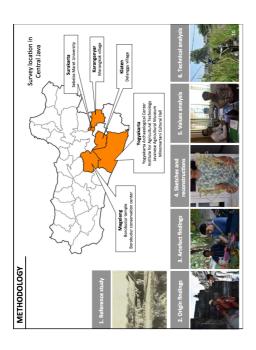




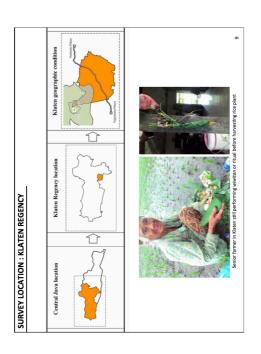


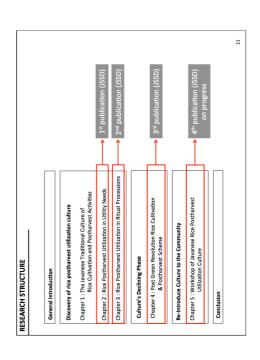




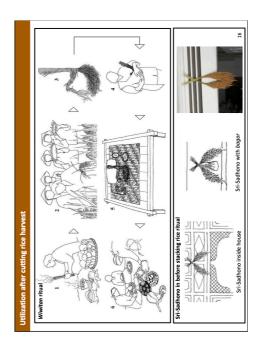




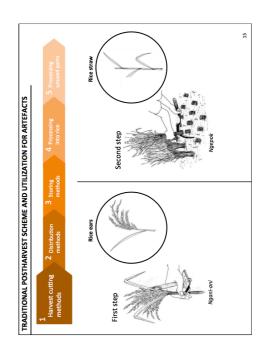


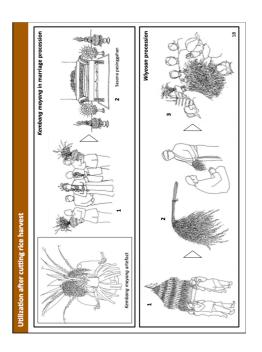


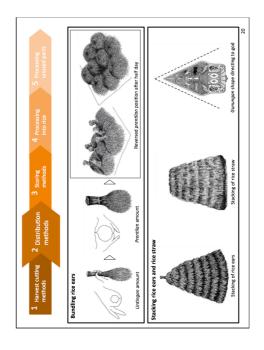


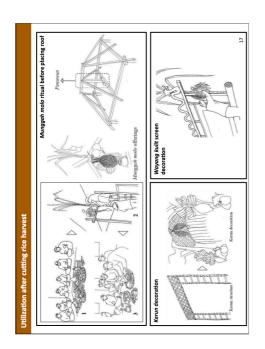


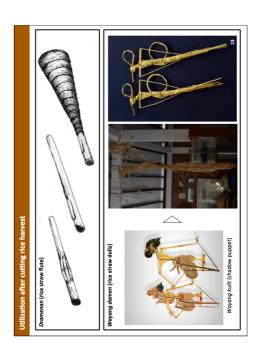


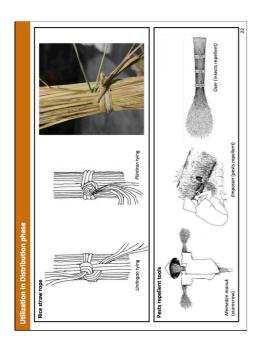


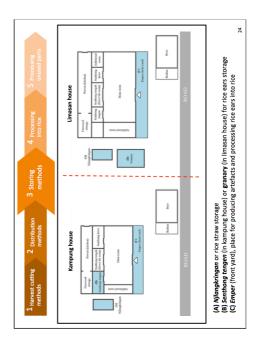


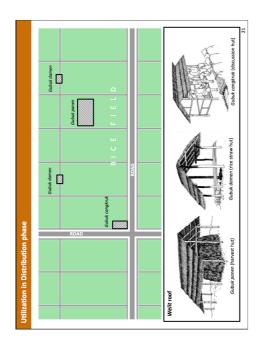


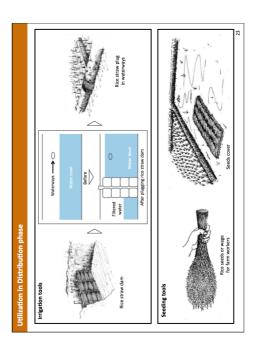


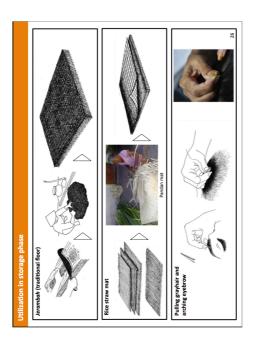


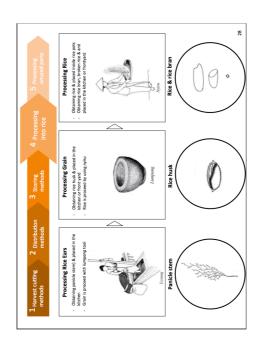


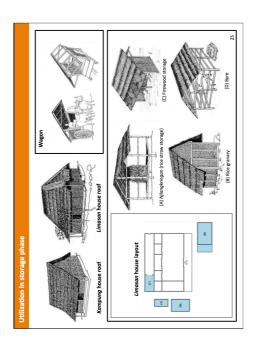


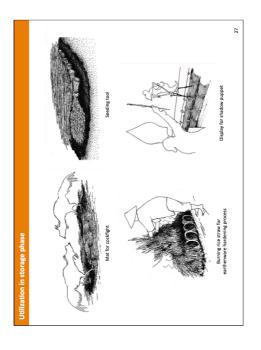


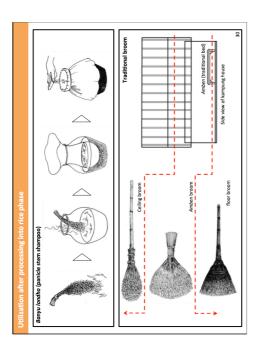


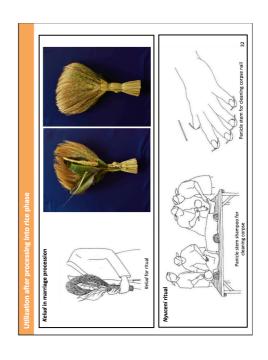


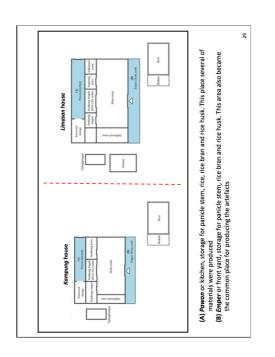




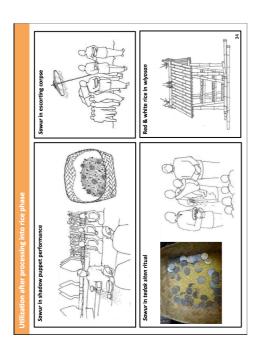


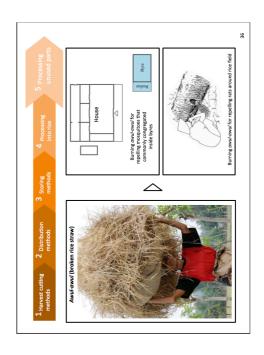


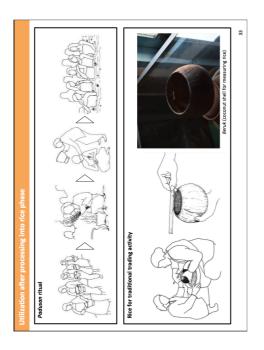


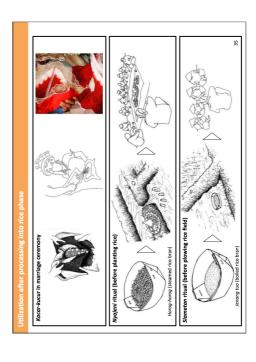


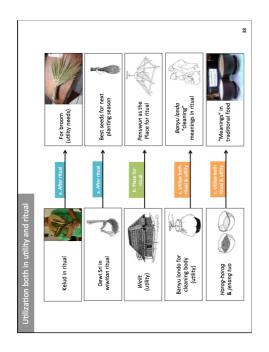


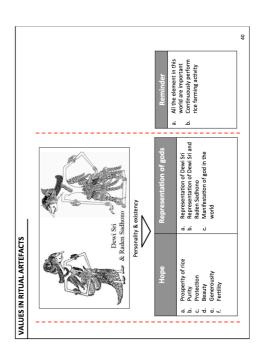


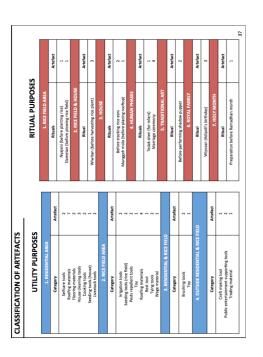


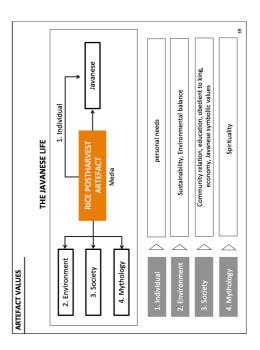


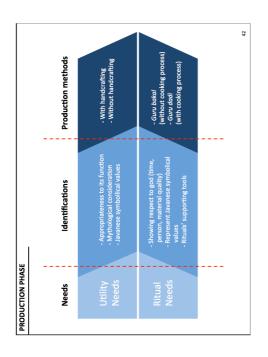


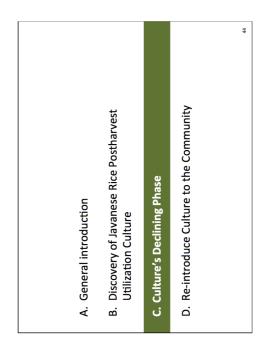


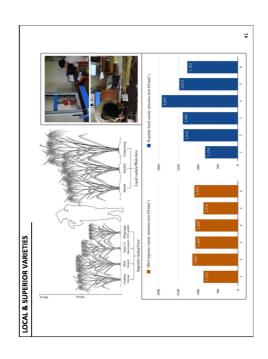


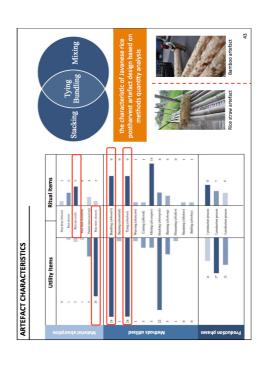


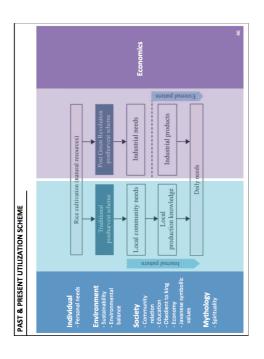






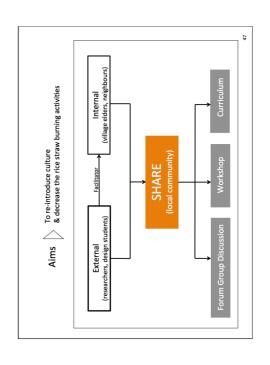




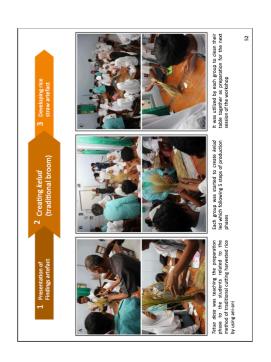


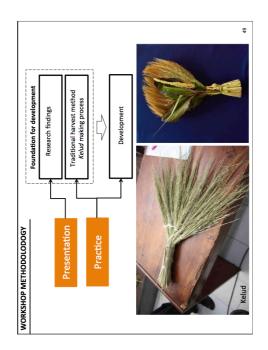




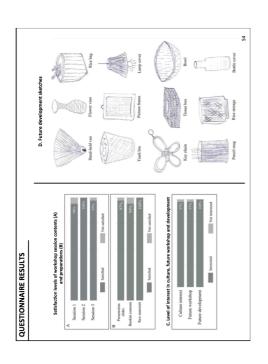


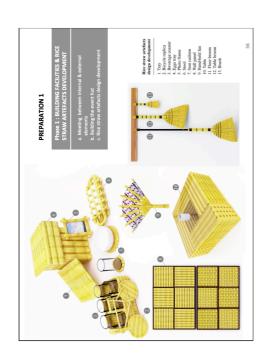




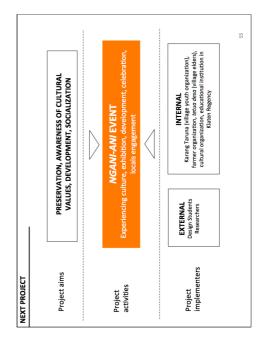




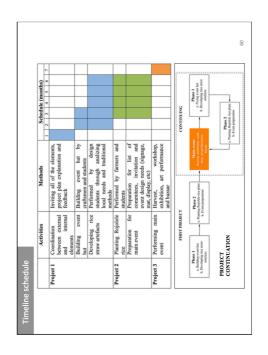




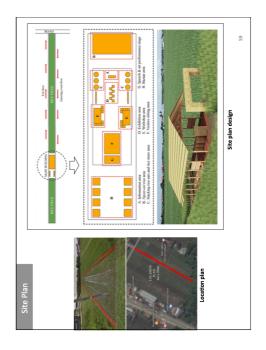












ご清聴ありがとうございます THANK YOU

a. Through this research, it is proved that the Javanese rice postharvest utilization culture was practiced by the community majority before Green Revolution

b. This culture showed rice plant artefacts as a media that connect Javanese with four elements, individual, community, environment, and mythology

c. This culture was gradually abandoned since the establishment of Green Revolution program and large industries

d. Through approaches such as workshop and future project plan proposed in Klaten regency, the cultural experience and development activities could be continuously performed.