Memedi sawah: environmentally friendly scarecrows for paddy fields

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Abstract. Four decades ago, memedi sawah or traditional scarecrows were commonly used to repel rice-eating sparrows in paddy fields in Java. Nowadays, many farmers use plastic sheets, a non-environmentally friendly material, tied to rows of bamboo sticks in the paddy field to repel sparrows. Memedi sawah is now transformed into works of art and displayed in prestigious art galleries. This study aimed to bring back memedi sawah made from environmental-friendly materials to the paddy fields. The production was done by implementing environmental-friendly design principles and the concept of aèng, a theory of creating Javanese cultural arts. The result of this study is expected to help farmers in protecting paddy plants while preserving the cultural values and spirit of the local community.

1. Introduction

Memedi sawah, a Javanese term for traditional scarecrow, is rarely found in paddy fields today. Instead, they are widely used for tourism purposes. Some examples of memedi sawah display can be found in Cadran Tourism Village, Kebonagung sub-district, Imogiri district, Bantul Regency of Yogyakarta Special Region [1]. Memedi sawah festival can also be found at Ngawan temple, Muntilan district, Magelang regency, Central Java [2]. In Ponorogo regency, East Java, memedi sawah festival is called Den-den Sawah Festival. Den-den is a Javanese term which means “to scare” [3]. Memedi sawah is a scarecrow made by farmers to repel rice-eating birds in paddy fields. Memedi sawah has become a rare sight in most other places in Java today. Memedi sawah is a form of folk art. If the Javanese community do not raise concern on this matter, memedi sawah may disappear from their culture. This is in line with a saying in Javanese expression “wong Jawa ilang seniné,” meaning that the Javanese are losing their sense of art [4]. In a broader context, there is also a saying “wong Jawa ilang Jawané,” [5] meaning that the Javanese are losing their cultural identity.

Memedi sawah is made from bamboo frame that is shaped like a human figure with a body made of damén (paddy straw). Memedi sawah is also completed with a hat and human clothes. Nowadays, memedi sawah has become a source of inspiration for art works that are interesting to be studied. Inspired by memedi sawah, Hari Budiono, an artist, created his individual art works that have been exhibited in various exhibition spaces such as at Bentara Budaya Jakarta on 14th – 23rd February 2019, at Bentara Budaya Bali on 2nd – 9th March 2019, at Bentara Solo on 14th – 20th March 2019, and at Bentara...
Yogyakarta on 23rd – 30th March 2019 [6]. Hari Budiono's work was not intended to repel rice-eating birds, but rather as a political symbolism to be contemplated, considering that 2019 was a heated political year in Indonesia [7].

**Figure 1.** Enjoying *memedi sawah* in a comfortable air-conditioned exhibition room. Unlike the room condition, it requires deep reflection to bring down the increasingly hot political atmosphere in Indonesia due to the 2019 presidential election (Source: [6,8,9]).

*Memedi sawah* used to be made to resemble a farmer’s figure to scare and repel birds. Farmers hoped that the birds would think that someone was guarding their paddy plants. Today, farmers are looking for an easier way to protect their fields. Many of them are now using plastic sheets tied to bamboo or wood poles that will move when struck by the wind. Such method is far from being aesthetic and gives a poor impression on the paddy fields. Plastic is not an environmentally friendly material. Plastic waste needs 1000 years to be completely decomposed by the soil and its particles will pollute the soil and groundwater [10]. Plastic can cause various diseases such as cancer, pregnancy disorders, and damage to body tissues [11]. Around the 1970s, *memedi sawah* was an interesting and entertaining spectacle for the public. Most of the activities of protecting paddy fields were carried out by farmers' children after school. They usually sat and played in a *gubuk* (paddy field hut) while guarding their paddy from rice-eating birds. When blown by the wind, *memedi sawah* would move as if it were alive. When there was no wind, the farmers would pull the rope that binds the *memedi sawah* to make it move.

Time has changed, so does farming method. In the past, farmers used buffalo to plow the fields. Today, they use tractors or hand tractors. In Kebumen, Central Java, farmers use tractors equipped with remote controllers. The tractor is called “*traktor setan*” or the devil's tractor by the residents, because it has no driver [12]. In the past, farmers picked rice from paddy using *ani-ani*, a rice cutter operated using fingers. Because they felt that it was not fast enough, farmers replaced it with sickles, and later with rice harvesting machines. The harvesting machine not only cuts paddy, but also threshes the grain and puts it into rice bags. All of this is done for the sake of a more effective and efficient economy. Such practice is indeed far from being sacred. In ancient times, farmers paid tribute to the goddess of paddy, *Dewi Sri* [13]. Today, *Dewi Sri* has left the farmers, or the other way around, the farmers have left *Dewi Sri*. 


Figure 2. The process of plowing the fields with buffalo that is replaced by tractors, ani-ani and sickles are replaced by rice harvesting machines, and memedi sawah are replaced by plastic sheets or made from plastic waste (Source: [14–18]).

In some regions, Memedi sawah is preserved and developed by artists or farmer communities who have artistic awareness. When paddy field starts turning yellow, artists collaborate with rice-growing farmers to hold a lively memedi sawah festival that attracts many visitors. This activity has become a spectacle for the community. Unfortunately, many of the memedi sawah are made from materials that are not environmentally friendly. Memedi sawah should be specially designed. A question then emerged, namely what kind of memedi sawah design is environmentally friendly and does not endanger people’s health? This study seeks to bring back memedi sawah and integrate it with the culture of the farming community and their local spirit.

2. Methods
The data in this study were several pre-existing memedi sawah to be interpreted and then re-created. This is in accordance with the argument that an observer can recreate a work of art and give it a new meaning [19]. Re-creation can be done by "ngowahi rupa", which is changing the shape to produce a new model without changing the internal structure such as the legs, body, and head [5]. The creation of the new works was carried out by considering environmentally friendly principles such as choosing materials that are easily recycled by natural process and production process that do not require much energy [20]. Further, data related to sparrow (Lonchura leucogastra) characteristics were also taken into consideration. The data include certain colors that the bird does not like, its habit, and so on. In addition to ngowahi rupa, the artistic concept of aëng or strange was also used as the creation theory. Strange in this case does not mean bad or ugly. It was used to produce new unusual forms [21]. Related to copyright, the concept of aëng is also used to gain flexibility in the creative process of producing new works [22].
3. Results and discussion

The eco-friendly concept in making memedi sawah includes not using plastic materials and using handmade creation technique that requires less energy. Once completed, memedi sawah requires little or no maintenance. When no longer used, the material for making memedi sawah can be reused for other purposes. This means that memedi sawah materials are recyclable, safe, and do not harm its users and the environment. The eco-friendly figure of memedi sawah is made from a bamboo frame that resembles a farmer's face. Its body is made from cloth strung together to resemble a human body and equipped with a farmer's hat to scare birds away. To make it more interesting, the memedi sawah was added with audio elements that will produce sound when blown by the wind. A series of memedi sawah can also be connected with a long rope that can be pulled at any time from a gubuk when the birds arrive. Gubuk is a small hut in paddy field where farmers shelter from the hot sun and rain. Another alternative that can be done is using materials that make the sparrows uncomfortable such as flashy colors like yellow. Sparrows don't like shiny objects either. The weakness of shiny material is that it cannot reflect sunlight during the rainy season [23]. The recommended memedi sawah design is a combination of the two concepts that the sparrows fear, something that works in both rainy and dry seasons.

The benefit of eco-friendly memedi sawah lies in its effectiveness in repelling birds. Sparrows usually eat rice grains from morning to evening. This causes farmers to lose 30-50 percent of their crop yields. The birds will attack paddies that are 70-80 days old, when the rice grains have been formed [23]. Therefore, the presence of memedi sawah to repel birds is needed. In terms of art, the main purpose of making memedi sawah is to work in nature, blend with nature, bring harmony, and practice art. Memedi sawah can also serve as a means of artistic creation and entertainment after a hard day of work. It can be an art work that is also useful for repelling bird pests at the same time. Memedi sawah should be arranged at a certain distance to be effective in covering a large area.

4. Conclusion

Based on the above discussion, it can be concluded that the eco-friendly concept of memedi sawah includes the use environmentally friendly materials, deterrence of using plastic materials, the use materials and colors that sparrows are scared of, and the use of lightweight materials that can be easily...
moved by the wind. The form of *memedi sawah* resembles a human figure with its elements such as head, body, hands, and feet. These elements can be created and arranged into works of installation art according to the artist’s characteristics. The artist interaction in working among the community and in paddy fields is a tangible manifestation of their concern for community problems. Exposure through social media is needed to disseminate this kind of activity. The benefits of eco-friendly *memedi sawah* are directly related to environmental conservation and the preservation of folk arts and culture that have been much abandoned.

References

[1] UGM BPF 2015 *Festival Memedi Sawah: Menuju Desa Wisata yang Berbasis Lokalitas dan Edutourism* https://primordia.faperta.ugm.ac.id/2015/11/12/festival-memedi-sawah-menuju-desa-wisata-yang-berbasis-lokalitas-dan-edutourism/

[2] Putra Y M P 2017 *Festival memedi sawah jadi daya tarik wisata muntilan* available at: https://www.republika.co.id/

[3] Diyanto N 2017 *Festival Den-den Sawah, Cara Masyarakat Glinggang Jaga Alam* https://www.kompasiana.com/bunnan/58d3b6ddc723bd9430bbf607/festival-denden-sawah-cara-masyarakat-glinggang-jaga-alam?page=all

[4] Widayat R, Saat M K M, Adi S P and Mataram S 2020 *Wacana Seni Journal of Art Discourse* 19 29–45

[5] Widayat R 2016 *Estetika Barang Kagunan Interior Dalem Ageng di Rumah Kapangérnan Keraton Surakarta* Dissertation (Surakarta: ISI Surakarta)

[6] Harususilo Y E 2019 “*Memedi Sawah*”, *Ketika Kita Menjadi Manusia Intoleran* https://edukasi.kompas.com/read/2019/02/12/14252071/memedi-sawah-ketika-kita-menjadi-manusia-intoleran?page=all%0A

[7] Bentara buana team 2019 *pameran seni rupa memedi sawah karya hari budiono* https://bentarabudayabali.wordpress.com/2019/03/01/pameran-seni-rupa-memedi-sawah-karya-hari-budiono/

[8] Vicharius D J 2019 *Memedi Sawah dan Sebuah Pasar Ketakutan* https://www.satulingkar.com/post/2019/02/27/memedi-sawah-dan-sebuah-pasar-ketakutan

[9] *pameran-memedi-sawah.jpg* https://media.suara.com

[10] Priliantini A, Krisyanti and Situmeang I V 2020 *Jurnal Komunika* 9 40–51

[11] Gunadi R A A, Parlindungan D P, Santi A U P, Aswir and Aburahman A 2020 *Prosiding SEMNASKAT LPPM UMJ* vol 2020 ed A I Ramadhan (Jakarta: LPPM UMJ) 7998

[12] Muhamad R 2018 *Berpiranti Robotik, Berapa Harga Traktor ‘Setan’ dari Kebumen* https://www.liputan6.com/regional/read/3799431/berpiranti-robotik-berapa-harga-traktor-setan-dari-kebumen

[13] Nastiti T S 2020 Tusotowa 3 1–12

[14] Jateng Daily 2021 *FOTO: Masih Terjaga, Kearsian Lokal Usir Hama Burung* https://jatengdaily.com/2021/foto-masih-terjaga-kearsian-lokal-usir-hama-burung/

[15] Mr Tractor *Traktor Dan KERBAU Membajak Sawah G1000 G3000 Zeva* https://www.youtube.com/watch?v=hBHJkRuUdNE

[16] Lazada Mall 2020 *Arif Ani Ani Padi Bilah Panjang - Sabit Madura Kecil Pemotong Rumput Tajam* https://www.lazada.co.id/products/arit-ani-ani-padi-bilah-panjang-sabit-madura-kecil-pemotong-rumput-tajam-1078034531.html

[17] Triknews 2018 *Harga Terbaru Mesin Padi KUBOTA DC-70* https://trikpos.blogspot.com/2018/12/harga-terbaru-mesin-padi-kubota-dc-70.html

[18] Solopos 2016 *Festival Memedi Sawah, Ingatkan tentang Ancaman Kedaulatan Pangan* https://www.solopos.com/festival-memedi-sawah-ingatkan-tentang-ancaman-kedaulatan-pangan-770227

[19] Sutopo H B 2002 *Metode Penelitian Kualitatif* (Surakarta: Sebelas Maret University Press)

[20] Hidup Tanpa Sampah team 2020 *Apa itu Sustainability atau Hidup Keberlanjutan*
http://www.hiduptanpasampah.com/apa-itu-sustainability/

[21] Widayat R and Studyanto A B 2021 *Mudra J Seni Budaya* **36** 15–22
[22] Widayat, Rahmanu and Ardianto DT 2020 *Lekesan Interdiscip J Asia Pasific Arts* **3** 20–4
[23] Pramono E 2021 *Cara Pengendalian Hama Burung Pipit yang Sering Digunakan Petani Padi* https://fpp.umko.ac.id/2021/03/29/cara-pengendalian-hama-burung-pipit-yang-sering-digunakan-petani-padi