PRESERVING THE LOCAL CULTURE OF SASIRANGAN BATIK IN KERTAK HANYAR 2 VILLAGE WITH HEALTHY PRODUCTION

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Abstract

Kertak Hanyar 2 Village, Banjar Regency, South Kalimantan has the potential to be developed as a village of Sasirangan batik craftsmen, preserving local culture. There are 30 Sasirangan batik craftsmen who produce traditional batik, done by human hands, from making motifs, coloring, dyeing, drying and selling. The majority of craftsmen still dispose of the dyeing waste of Sasirangan batik under wooden houses or in the surrounding environment, but there are some who have simple holding ponds. The purpose of this study was to identify the use of Sasirangan batik dyes and the potential to cause pollution to the surrounding environment. The research method was prepared descriptively with the research sample carried out by purposive sampling by taking samples from 2 large Sasirangan batik craftsmen in the village of Kertak Hanyar 2, Banjar Regency, South Kalimantan Province with the biological, physical and chemical parameters of the heavy metal content of chromium and cadmium compared with the threshold according to the regulation. Governor of South Kalimantan Province Number 04 of 2007. The results showed that the production of sasirangan in the village of Kertak Hanyar2 has been started since 1986 until now, 100% of sasirangan batik production uses chemical dyes. Physical and chemical indicators are still below the permitted threshold according to the Regulation of the Governor of South Kalimantan Province Number 04 of 2007, several parameters that exceed the quality standard. The heavy metal content of chromium in snakehead fish is 0.456 mg/kg, the Physical parameter (color) shows the value of 107.93 TCU, the chemical parameter is COD (one sample) with a COD value of 348.9 mg/L. Conclusion: This Sasirangan batik craftsman uses 1100% chemical dyes with chromium metal content exceeding the standard threshold set by the government, so it has the potential to pollute the surrounding environment.

Keywords: sasirangan, local culture, dyes, pollution

Introduction

Kertak Hanyar 2 Village is one of the villages in Kertak Hanyar District, Banjar Regency, South Kalimantan, with an area of 364 hectares. This area is residential land and land for rice and secondary crops. Before 1980, the village of Kertak Hanyar was led by the Village Head, after 1980 it was led by Pembakal, it has changed several times and is currently led by Pembakal Mardani. The total population until the end of December 2020 was 6735 people with a total of 1703 families. , there are 30 Sasirangan Batik craftsmen and of them there are 7 large Sasirangan craftsmen managed by families and assisted by wage craftsmen from the surrounding community, namely: Sukma Sasirangan, Iwan Sasirangan, Diqi Sasirangan, Qutby Sasirangan, Anas Sasirangan, Dhika Sasirangan and Mutia Sasirangan (Profil Desa Kertak Hanyar 2, 2021).

Sasirangan batik is a local culture that needs to be preserved, so that until now its production is done traditionally with hand expertise in making the motifs. Sasirangan comes from the words "sa" and "sirang" which means one basting, taken from the manufacturing process which is basted and concluded as one (Tonny Aries Wijaya, 2015). Sasirangan batik is made from generation to generation from the ancestors of the people in South Kalimantan. Sasirangan batik is made from ordinary cotton fabrics to silk fabrics derived from Chinese silk fabrics and Javanese primatex fabrics, so that they can be used by low to high economic people according to the type of fabric (Yunita Fitri Andriana, 2018). Sasirangan Batik entrepreneurs and craftsmen still carry out their production in a simple way. By using simple tools from printing motifs, still using makeshift tables, simple drawing paper for batik motifs. There are 27 Sasirangan batik motifs but the ones that are often made are sari ivory, classic, gradation and rainbow motifs. The immersion of the dyeing process with a makeshift bucket, chemical dyes are placed in any place, the majority of the wastewater soaking Sasirangan batik is directly disposed of in the surrounding environment, only a portion is disposed of in the holding pond but only a small portion of the surrounding is given soil. Based on the background, problems can be formulated, how is the production process of sasirangan in producing batik dye waste? The purpose of this study was to identify the potential waste of Sasirangan batik dye and the potential for waste to pollute the environment in Kertak Hanyar 2 Village, Banjar Regency.

Materials and Methods

The research method used in this research is descriptive experimental with purposive sampling. The population in this study is the community in the village of Kertak Hanyar 2 who is trying to be a Sasirangan batik craftsman with a population of 30. The sample used in this study is a Sasirangan craftsman who meets the inclusion criteria, namely Sasirangan batik craftsmen who are willing to become respondents, have become Sasirangan batik craftsmen. more than 1 year, and has marketed its production. Starting with extracting data on Sasirangan batik craftsmen to identify the Sasirangan batik production process in Kertak Hanyar 2 village, Banjar district through the interview method. The indicators/parameters of the test include the type of dye used in batik sasirangan and the processing and disposal of waste dyes for batik sasirangan. Followed by measuring laboratory examinations with physical indicators/parameters consisting of laboratory tests for temperature and color, and chemical indicators/parameters consisting of laboratory tests for levels of COD, total chromium (Cr), Cadmium levels and pH.

2. Results and Discussion

The number of sasirangan craftsmen in Kertak Hanyar 2 village, Banjar Regency who meet the inclusion criteria are 7, namely Sukma Sasirangan, Iwan Sasirangan, Diqi Sasirangan, Qutby Sasirangan, Anas Sasirangan, Dhika Sasirangan and Mutia Sasirangan have been around since 1996 until now in 2021, with a total of Most craftsmen were built in 2007 to 2020. The impact of the Covid- 19 pandemic caused not every day to produce, so samples were taken from batik coloring production waste in two places representing medium-sized craftsmen with incomes of 6-10 million per month, namely Sukma Sasirangan and a big craftsman with an income of more than 30 million per month, namely Iwan Sasirangan. The process of processing sasirangan craftsmen in Kertak Hanyar 2 village, Banjar Regency generally involves the local community, for basting sewing can be done at their respective homes. Sasirangan batik production is carried out in the following sequence: Cutting white cloth into a size of 2 meters per sheet, making patterns from the cloth according to the desired motif, doing sewing (sirang) with basting sewing according to the pattern that has been drawn, doing sweeping (scan) the stitches one by one so that the pattern / motif is neatly formed and not mixed later when colored, the fabric that has been completely sewn is then ready to be colored (dyed, dabbed, or both). according to the color

requested / desired. Dyeing is usually left for a few hours or up to 1 night (to get a bright and sharp color), the dyeing technique is to obtain only one color, namely by dipping the cloth into a dye solution, except on the part of the cloth that is basted. The part that is basted will remain white, the Pencoletan technique is carried out if the motif that is made requires more than one color, the dyeing and pencoletan technique to obtain a good basic color, the cloth is dyed first and then smeared with a variety of colors as planned, after finishing coloring, waste water former Sasirangan dyeing is disposed of on the surrounding ground or under the house, slowly removing the basting stitches one by one so that the fabric is not damaged, the fabric is rinsed/washed clean and then dried in the sun to dry, the fabric is ironed and ready to be sold (Nasrudin, 2018). The types of motifs commonly made by Sasirangan craftsmen are Sarigading, Classic, Gradasi and Rainbow. The number of processing (sheets/day) according to the type of Sasirangan fabric motif with the highest average volume, namely 30-50 sheets/day for classic gradation motifs, volume 50-100 sheets/day for rainbow motifs, and 0-5 sheets/day for sarigading motifs.

Coloring is a fairly complicated process that requires special skills. Coloring cannot be done haphazardly, but must be done carefully and carefully based on the type of fabric and the color combination to be made. Sasirangan batik production in its manufacture, as in the manufacture of other textiles, involves a lot of coloring and dyeing processes. In coloring, synthetic dyes are used such as dyes such as naphtol, indigosol, reactive and indanthreen which will produce large amounts of concentrated colored liquid waste (Nintasari and Amaliyah, 2016). The waste disposal mechanism for the Sasirangan craftsmen in Kertak Hanyar 2 Village, Banjar Regency, is directly dumped under the house or in the yard without any waste treatment. This is in line with the research conducted by Mizwar, Anndy, Diena and Nurin Nisa Farah in the city of Banjarmasin, where disposal is carried out arbitrarily either in the process of coloring or washing which goes directly under the house and has direct access to the Martapura River. This waste is dumped directly into the ground or the nearest river by the people who make sasirangan batik. This causes the resulting liquid waste to contain various kinds of pollutants (Mizwar, Andy. Diena, Nurin Nisa Farah. 2012) (Tribunbanjarmasin.com).

The potential for dyeing liquid waste of sasirangan craftsmen is measured with the measured parameters including 3 (three) main indicators namely biology, physics and

chemistry which are adjusted to the Regulation of the Governor of South Kalimantan Province Number 04 of 2007 Appendix 1.10 concerning Quality Standards for Textile Industry Liquid Waste. Biological indicators measured in this study were heavy metal elements Cr (Total Chromium) and Cd (Cadmium) in mg/fish. The type of fish chosen is the Cork Fish as one of the typical fish species that live in the river Banjar Regency, South Kalimantan. Heavy metals can accumulate in the body of an organism and remain in the body for a long period of time as accumulated toxins (Nani Apriyani, 2018). Bioaccumulation of heavy metals in fish in aquatic environments can occur through 3 accumulation ways (Martuti, 2012), namely accumulation of heavy metals from suspended particulates (sediments), accumulation of heavy metals from fish food (food chain system) and accumulation of heavy metals dissolved in water. water. Table of heavy metal content of dyes in Sasirangan batik in Kertak Hanyar 2 Village, Banjar Regency:

Table1. Heavy metal content of dyes in Sasirangan batik

No.	Metal Element Content	Unit	Maximum Rate	Result	Method
1	(Cr) Total chrome	mg/kg	0.1 *)	0.351	APHA 3120 B 22 2012 (ICP)
2	(Cd) Cadmium	mg/kg	1.0**)	0.226	APHA 3120 B 22 2012 (ICP

**). Regulation of the Head of the Food and Drug Supervisory Agency Number HK.00.06.1.1.52.4011 concerning Determination of Maximum Limits of Microbial and Chemical Contamination in Food*
***). SNI 7387:2009 about the Maximum Limit of Heavy Metal Contamination in Food*

The table above shows that the parameter of total chromium metal content (Cr) is above the maximum threshold according to the Regulation of the Head of the Food and Drug Supervisory Agency Number HK.00.06.1.52.4011 concerning the Determination of the Maximum Limit of Microbial and Chemical Contamination in Food, which is 0.1 Mg. /Kg, while Cadmium (Cd) is below the safe limit for consumption, according to SNI 7387:2009 concerning the Maximum Limit of heavy metal contamination in food.

Cadmium is a chemical element in the periodic table that has the symbol Cd and atomic number 48. This soft and bluish-white metal is chemically similar to two other stable metals in group 12, zinc and mercury (Permenkes No. 416 of 1990 and PP No. 81 of 2001). Cadmium or heavy metals basically does not have a good impact on living things, especially if consumed by humans. Cadmium can be contained through waste streams that enter river flows and are contaminated with river areas so that animal and plant ecosystems

are affected by heavy metals (Nani Apriyani, 2018).Unsur kromium pada badan perairan dapat masuk melalui dua cara, yaitu secara alamiah dan non lamiah, masuknya kromium secara alamiah dapat disebabkan oleh beberapa faktor fisika, seperti erosi yang terjadi pada batuan mineral. Masukan kromium yang terjadi secara nonalamiah lebih merupakan dampak atau efek dari aktivitas yang dilakukan manusia (Hening Widowati, 2015).

Chemical parameters in knowing the potential for liquid waste of sasirangan dye are based on Governor Regulation Number 4 of 2007 namely Total Chromium. Chromium metal (Cr) is one type of toxic heavy metal pollutant, in the body chromium metal is usually in a state as Cr3+ ions. Chromium can cause lung cancer, liver and kidney damage. Contact with skin causes irritation and if swallowed can cause stomach upset and vomiting.

Based on the biological parameters described above, it is known that the content of heavy metal elements in the type of snakehead fish in the Banjar Regency River is 0.351 mg/Kg for Total Chromium (Cr) or exceeds the safe consumption threshold which requires 0.1 Mg/Kg according to the Regulation of the Head of the Food and Drug Supervisory Agency Number HK.00.06.1.52.4011 concerning the Determination of Maximum Limits of Microbial and Chemical Contamination in Food, while the element Cadmium (Cd) or is still within the safe limit for consumption, namely the maximum limit of 1.0 mg/kg according to BPOM No.03725/B/SK/89 and SNI 7387:2009 concerning the Maximum Limit of Heavy Metal Contamination in Food. Color in water is caused by the presence of particles resulting from decay of organic matter, natural metal ions (iron and manganese), plankton, humus, industrial waste, and aquatic plants. The presence of iron oxide causes the water to be reddish in color, while manganese oxide causes the water to become brownish or blackish. An iron content of 0.3 mg/l and a manganese content of 0.05 mg/l is sufficient to cause color in the waters (Putra, 2011). One example of a dye that is widely used in the textile industry is remazol black, red and golden yellow. In coloring, this compound is only used about 5% while the remaining 95% will be disposed of as waste. This compound is quite stable so it is very difficult to be degraded in nature and harmful to the environment especially in very large concentrations because it can increase COD (Chemical Oxygen Demand). COD is the amount of oxygen needed to break down all organic matter contained in water (Putra, 2011).

Table 2. The COD value of laboratory examination results

The COD value of laboratory examination results is as follows:

No.	Sasirangan batik craftsmen	Maximum Rate	Check Up Result	Method
1	Iwan Sasirangan	100	189.6	SNI 6989.2 :2009
2	Sukma Sasirangan	100	68.9	SNI 6989.2 :2009

The table above explains that the COD parameter shows that 1 location is below the threshold according to the Decree of the Governor of South Kalimantan Province Number 4 of 2007 concerning the Textile Industry Liquid Wastewater Quality Standard, which is 100 mg/L and one sample with a value above the threshold with a COD value. 189.6 mg/L.COD atau kebutuhan oksigen kimia adalah jumlah oksigen yang diperlukan agar limbah organik yang ada di dalam air dapat teroksidasi melalui reaksi kimia. Nilai COD merupakan ukuran bagi tingkat pencermaran oleh bahan organik (Nani Apriyani, 2018).

Healthy production requires additional operational costs, of course, coloring with environmentally friendly natural materials, for example, from interviews with the use of natural colors, the quality of batik is less because it fades easily, the availability of natural dyes is not stable and the price of batik produced becomes more expensive. The craftsman's statement is in line with Marheni in his book Natural Color Batik which states that natural colors fade easily and it is very difficult to produce uniform colors. In other terms, the availability of natural colors is not sufficient (Marheni, 2016). During this pandemic, it is necessary to use a lot of antiseptics both at the production house and at the Sasirangan batik shop. Natural antiseptics from natural ingredients that are easy to find and can be made yourself, namely the formulation of betel leaf (Piper bettle), lime peel (Citrus aurantifolia) and bund plant (Acticiprus grosus) with a concentration of 50% from the results of our research (Darini, Noval, Kunti, 2020). During the production process, craftsmen should always use personal protective equipment such as masks and gloves. Of course this will be a burden for craftsmen, but to maintain health, of course, personal protective equipment is needed because exposure to chemical dyes for a long time will have an impact on health, especially respiratory tract infections, skin cancer, kidney disease (Fahrul Islam & Budi Hartono, 2016).



Figure 1. Picture of Team Coordination with Pemalang Desa Kertak Hanyar 2 Banjar Regency



Figure 2. Image Interview with a sasirangan craftsman, Mr. Apan, a Sasirangan batik maker from entrepreneur Iwan Sasirangan



Figure 3. Picture of Sasirangan batik coloring by Mr. Apan from Iwan Sasirangan



Figure 4. Picture of Drying after dyeing by Mr. Apan from Iwan Sasirangan



Figure 5. Picture of Team Interview with Sukma Sasirangan



Figure 6. Picture of Team Interview with Iwan Sasirangan



Figure 7. Picture of Team Interview with craftsmen Diqi Sasirangan accompanied by officers/apparatus of Kertak Hanyar 2 village, Banjar Regency

Conclusion

Sasirangan batik craftsmen in Kertak Hanyar village 2, Banjar district, South Kalimantan are still simple in their production process, using 100% synthetic chemical dyes and the majority of them have not treated liquid waste using these dyes so that it will have an impact on environmental pollution because there is heavy metal chromium exceeding allowable threshold. Likewise, the COD exceeds the allowable threshold.

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Declaration of Interest Statement

There is no conflict of interest in this research

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